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AMERICAN VETERINARY REVIEW.

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AMERICAN VETERINARY REVIEW.

FEBRUARY, 1907.

EDITORIAL.

EUROPEAN CHRONICLES.

PARIS, FRANCE, Dec. 15, 1906.

VETERINARY CIVIL SERVICE EXAMINATIONS.—A short time ago Prof. Leclainché, the able director of the *Revue Générale*, published in his journal a long leading article on the *Scandales* of Chicago. Inspired by the reading of the sensational book of Upton Sinclair, and made up with many of the fanciful descriptions of the author of "The Jungle," the leader of Prof. Leclainché attracted much attention, and no doubt created among those who read it a rather poor impression of the work done by the veterinarians of the Bureau of Animal Industry, and it would have been but just and right that the article of Dr. D. Arthur Hughes, treating on the subject of meat inspection, and published in our October issue, should also have been analyzed in the pages of the *Revue Générale*, although it would not have been as sensational as the extracts from Upton Sinclair. Anyhow, it would have served to put things in their proper focus!

At the end of his article, Prof. Leclainché speaks of the new law in the United States relating to the inspection of meat and of the inspectors, saying that it would be easy to show that the reorganized American inspection is not yet up to its task; that it was true 150 new positions had been created, but that the program of the examination had remained what it was, and that from it one could imagine what could be expected from those newly appointed, and in marginal notes the condition of what the *Revue* calls a *scandalous* program is given in full!

I have for Prof. Leclainché a great deal of respect and of friendship, but I must acknowledge that this part of his article caused me much sadness and disappointment, and I made up my mind to obtain all the documents I could, so as to be able to reply to him. I have secured from Washington and from the States some information, and, to my great surprise and sorrow, I find that I have nothing to reply to the Professor. On the contrary, if I had anything to say, I would thank him for showing us the disgraceful condition the veterinary inspector of America is placed in when compared with those of Europe—at least, as far as the requirements for the position are concerned.

What are these requirements, and what is the examination before the Civil Service Commission? According to the "Manual of Examination," revised to July 1, 1906, page 57, section 208, it is as follows:

"Sec. 208. Veterinary Inspector, Bureau of Animal Industry, Department of Agriculture.—(First a few generalities relating to credentials as to age, application, time allowed and condition of graduation in a veterinary college, and then come the subjects of examination and relative weights of subjects on a scale of 100): '*Spelling, 5; arithmetic, 5; letter writing, 5; penmanship, 5; copying from plain copy, 5; veterinary anatomy and physiology, 15; veterinary pathology and meat inspection, 30; theory and practice of veterinary medicine, 30.* The last three subjects include general questions on anatomy and physiology, a consideration of the pathology of diseases in general, and such special pathology as is characteristic in the diseases common to food-producing animals. The symptoms, diagnosis and treatment of diseases incident to domesticated animals will be considered; also, the laws and rules promulgated for the regulated inspection of meats.'"

* * *

Let us compare these with the requirements in Europe, at least in the two countries from which I have been able to get them (France and Italy). I regret that I am not able to show

those of Germany, but I believe that, if they differ, it is in being more severe in the last named country.

In France.—Credentials about age, judiciary penalty record, liberation from military service and presentation of the diploma of veterinarian are the first conditions to be complied with before a candidate is admitted to present himself. In 1887, about the time of the organization, there were two examinations, one written, a study on diseases which are likely to alter the meat, and then a report on the presence of such. The other was a practical examination, divided into two parts: (1) examination of diseased meats and detection of the causes of their being retained or condemned; (2) microscopic examination of diseased meats.

In a recent call for candidates, similar credentials are also demanded, the diploma being always necessary, or in its place a certificate from the school the candidate has attended. The candidates are submitted to three series of examinations: *First*, a written one, consisting of the redaction upon a subject relating to the sanitary police of animals, to the control of meats or to the inspection of the classified establishments. Four hours are allowed for this task. *Second test*, a practical examination at *the cattle market*, including (*a*) a clinical examination of animals affected or suspected of contagious diseases, and oral description of the diagnosis; (*b*) macroscopic examination of meats, with oral description of the causes for saisie, if there is; determination of the organs or of the regions according to the descriptive and topographical anatomy.

(3) *At the Alfort School*, three tests: (*a*) microbiological analysis of unwholesome meats or of cadavers of animals affected or suspected of contagious diseases; (*b*) examination of unwholesome meats and of falsified fleshy products to the chemical point of view; (*c*) concise demonstration of the results obtained and the methods used in the analysis. Finally, an oral examination is to be passed on the following: Administrative and judiciary organization in France, sanitary police, control of meats, inspection of classified establishments, laws and regulations.

In Italy I find, in the *Clinica Veterinaria*, that a candidate has to furnish credentials consisting of certificate of birth, of nationality, of exemption from judiciary penalty, of good conduct and of recent vaccination, and, of course, his diploma. The examination consists of: (1) A written examination upon a subject of sanitary police; (2) a written examination upon a question of public alimentary hygiene, made in an official sanitary form; (3) an oral examination upon the infectious and epizoötic diseases of cattle, on parasitic, non-microbian diseases, and upon sanitary legislation; (4) a practical examination on microscopy and bacteriology; (5) a practical examination of inspection of meat at a market; (6) a clinical examination of animals affected or suspected of contagious diseases.

* * *

What can be the conclusions on the status of affairs? It seems that nothing else can be done than to have the requirements of the Civil Service Examination revised entirely, and to make them what they ought to be.

Doctor Melvin, the new chief of the B. A. I., is a zealous chief; he is a good veterinarian; he is doing good work, but he can make a better one and gain for himself a great name by obtaining this important reform!

Would it be impossible to find candidates? Would the changes be so difficult to realize, even in trying only something less severe?

I think not! I believe the contrary!

In the same way that the Bureau of Animal Industry has been, with the influence of the A. V. M. A., one of the great powers which have made a three-years attendance at college obligatory for graduation and for admission to the Bureau, let it use, to-day, its influence in demanding of the many colleges in the Union a similar requirement for admission to school, thus doing away with the necessary *spelling*, *arithmetic*, *letter-writing*, *penmanship* (?) of the examination before the C. S. Commission. Let it use its influence in requiring from its candidates to inspectorships a uniform education obtained from

schools having a similar curriculum, thus doing away with the obligation of another examination on *veterinary anatomy and physiology*, *on pathology and meat inspection*, *on theory and practice of veterinary medicine* by the C. S. Commission, which is useless and good only to worry and trouble the candidate, as long as he already can present evidence of being in possession of all these (namely, his DIPLOMA) !

It then would leave only the examination of true specialties, such as sanitary science, sanitary police, sanitary pathology and medicine, meat inspection, microscopy and microbiology, in which the applicant would have to make separate but more serious studies than when at college, and upon which, after passing satisfactorily a written, oral and practical examination, he will deserve and receive his title of Sanitary Veterinary Inspector.

I fear and I know that the above remarks will not be received in the spirit in which I make them, and probably the new program will not be entertained as an improvement by some of the candidates. However, I offer the suggestion, as I do believe the entire veterinary profession would gain by having the reform realized: gain not only in obtaining men better fitted for the work and in obliging the schools to modify their mode of admission and improving their curriculum, but by assuring our professional standing among the scientific bodies of the world.

* * *

REVIEW OF THE TREATMENT OF RABIES.—Dr. P. Remlinger, Director of the Institute Pasteur of Constantinople, has published in the *Revue Scientifique* an article on the present state of the treatment of rabies, which has attracted much attention and from which I extract a few points. For a few months the directors of antirabid institutes (and they are numerous on the surface of the globe, nearly a hundred), have been much interested in the communications which have been published upon the action of radium on the rabid virus. "Interested" is the word undoubtedly ! It was just their existence which was threatened ! While it appeared by the works of

Jules Rehns, and of Jirnow, that the attenuation of the rabid virus under the influence of radium was of no practicable value, the sensational publications of Tizzoni and Bongiovanni, to which I alluded in my "Chronicles" of last April, were to have for result a complete revolution in the therapy of rabies by the use of this metal. An emulsion of 1 per cent. of rabid cord submitted to the action of radium, was rendered harmless for the dura mater of rabbits; it was transformed into a vaccine of such activity that animals, to which an injection of one drop was made in the eye, were vaccinated against the subdural inoculation of street rabid virus. Not only that! If one rabbit was inoculated with rabid virus and if radium rays were afterward thrown in the eye of the animal, he would escape the disease. The treatment would even be successful if the paralysis of the hind legs already existed. This would stop the disease and the animals would get well, while the witnesses would die on the sixth day. The question was, then, if truly the prophylactic treatment had not seen its day, and if in the future it would not be sufficient to wait until the disease was present to treat it with the same right as is done for lupus or for an epithelioma!

* * *

But, continues Remlinger, these expectations were not realized! Already in the Congress of the Italian Society of Internal Medicine, Calabrese made the declaration that, even at the dose of 100,000 radioactive units, radium had no more effect upon rabid virus than Röntgen rays; and afterwards, in another article, he confirmed his previous announcements. *In vitro*, after seventy-two hours of contact, there is observed a slight, irregular and not constant attenuation. *In vivo*, even after a contact started immediately after the trepanation, the essential condition of Tizzoni and Bongiovanni, and kept up twelve hours during two consecutive days, not one animal has been saved. It is true, however, that the death of the animals treated has sometimes been a little slower than with the witnesses, but it has been so slight that the hope to cure rabies with radium must be com-

pletely given up. As a mode of treatment of declared rabies, radium must go with the other remedies, such as the subcutaneous injection of normal cerebral substance in large doses of Babes, Kowalski, Krokiewiez, or of pilocarpine of Remlinger, or the lumbar puncture with injection of fixed virus made in the rachidian canal of Zaccaria, and many other recent attempts just as worthless. Rabies, sometimes spontaneously curable in dogs, has in man a prognosis which is absolutely fatal, and to-day, as before, the treatment worth consideration is, not the curative, but the preventive!

* * *

The prophylaxy of rabies is based upon the immunization of the persons which have been bitten, by subcutaneous injections of a special virus, called fixed virus, which is used first much attenuated, gradually more active and finally very virulent. The methods of preparing the virus may vary, but the treatment is about the same, and the results very markedly identical.

The Doctor keeps on with a consideration of these results, which I have spoken of on other occasions.

While it may seem that the question is solved by the criticisms of the Director from Constantinople, it remains yet open, and in the *Annales of the Pasteur Institute of Paris*, the Italian experimentors have come out with another article on the subject, and appear to reopen the discussion. It seems that there is radium and radium. Some which will give the results they have obtained first and some that do not. Their last researches have shown them "that in certain limits, the efficacity, upon rabies, of samples of radium of various power is not in direct relation with the difference of their physical properties; in such a way that the effects of more active samples are a little more rapid than those of weaker samples, but in a much smaller proportion than is observed for the difference of their radioactive strength."

At any rate, their conclusions are that if with radium rabbits can to-day be cured of rabies, there is no reason why in the

same conditions the same results cannot be obtained in man! Probably we will hear more of this later.

* * *

BIBLIOGRAPHY.—My bibliographical notes this month will be a kind of trip around the literature of the world, covering as it will, considerations on works which come from France, Italy and America, and which have been kindly sent to me by their authors. The large amount of material on hand must necessarily receive proper attention as soon as possible, and to postpone my acknowledgments to every one until the next month would certainly be a breach of politeness that the REVIEW must not be guilty of. Therefore, if my "European Chronicles" may suffer, at least my correspondents will not have the chance of blaming me, and I will consider the books received in the order they have come to my office.

* * *

"*The Elements of Clinical Diagnosis* (*Medical Semiology*)," by Professor Malkmus, of Hanover, translated from the German by Mr. A. Monvoisin, of Alfort. It is the reproduction of the second German edition of a very good little book with which our friends in America are already familiar by the translation which was published in 1901, and due to the pens of Profs. D. S. White and Paul Fischer, of the Ohio State University. I believe they translated the first edition; the work of Mr. Monvoisin is of the second. If I read aright, a third German edition is soon to appear in Germany.

In this little French work, we find the same occasion for praise as we did in the notice that was written in 1901 in this journal. But it offers besides special additions made by the French writer, annotations of great value. There are also a number of new illustrations. Besides all this, a preface has been written by Prof. Moussu, who has also recalled the importance of the necessity of proper diagnosis and insisted on the advantages that such a book gives to all those who desire to make one. The facts that the original book is in its third edition, that it is published in English, and now in French, say

more of its value than any critic might see fit to write.

* * *

The house of Asselin and Houzeau, which publishes the work of Mr. Monvoisin, has brought out almost at the same time another of great value, "*L'Abattoir Moderne*" (the Modern Abattoir), by Dr. A. Moreau, Sanitary Veterinarian. No man could have been more competent or better qualified to write such a work than Dr. Moreau is. Attached to the great slaughter-house of La Villette in Paris, he had the facilities for his researches, to look in all the official documents that he needed; he had lots of good material to study from, and, besides, an experience of many years. Scientific man, superior practical worker, Dr. Moreau has written an excellent work, in which are condensed all the information, and those interested in that direction will gain much in reading it. A preface is written by one of the best chiefs of the meat inspection service and followed by an introduction where the conditions of the old slaughter places, their regulations, and legislative dispositions, are considered. Then comes the grand subject of the modern abattoir, its disposition, arrangement, tools, rooms for slaughtering of cattle, pigs, horses, cooling rooms, freezing rooms, etc. It would be a difficult task for me to follow the author in all the special points which are contained in his book. It requires a specialist to do it, and it is in fact a book that all those who are interested in that specialty of meat alimentation must read and study. The meat inspector, the sanitary builder, the civil authorities, the official administrator, all, can obtain from reading it very important and very suggestive information. The numerous illustrations, the plans of several of the abattoirs of some of the principal cities in Europe, where those establishments are most modern, and the many references from every country of the old continent, show the great amount of valuable information that is to be found in the work of Dr. Moreau. The author deserves great credit, and no doubt his book will find its place among the best of the literature on that subject.

From Italy I received "*Studi sul bestiame del Montenegro, della Bosnia-Erzegovina e della Dalmazia*," (Study upon the Cattle of Montenegro, of Bosnia-Erzegovine and of Dalmatie), by Dr. Antonio Pirocchi, Director of the Institute of Zoötechny of the Superior Royal School of Agriculture of Milan. This forms the *résumé* of the work done by the author, who was sent by the General Inspector of the Industry and Commerce to go and study the conditions of the cattle, sheep and swine of these countries. In the first part the reader is presented with the consideration of the cattle in Montenegro in regard to the conditions of climate, number, breed, and their products in meat, milk or even labor. Sheep, goats and swine afterwards receive the same attention. Horses, asses and mules complete the series. The breeding and the general conditions of trade close the first part. In the second portion of the manuscript, only bovines and ovines are the subjects of remarks on the part of the author. To the point of view of zoötechny, this concise work presents a great deal of interest and the many handsome and characteristic illustrations, taken on the spot, give to the little extract of the Annals of Agriculture an unusual value.

Zoötechnicians of all nations will read this little work with much interest.

* * *

From America, among several pamphlets from the Bureau of Animal Industry, I notice "*Tuberculin Test of Hogs and Some Methods of Their Injection with Tuberculosis*," by E. C. Schroder, M. D. V., and John R. Mohler, V. M. D.,—a pamphlet of some fifty pages, where, as in all publications from the B. A. I., the reader finds always very interesting fields of information. Certainly in this last many points have received an amount of clearness which is of great importance. The variability of the temperature and the conditions under which it may vary, have been the subject of careful observations, which will bring valuable weight in the use of the thermometer with that class of animal.

"*Veterinary Surgery*," by Louis A. Merillat, V. S., is the second volume of the work that the author has undertaken to present to the American profession. The proper heading is "The Principles of Veterinary Surgery," and is published by the house of Alexander Eger, of Chicago, which has favored me with a copy.

Dr. Merillat is already well known to the profession; many of his writings have been presented to our readers. He has had the good fortune to succeed in obtaining from the French publishers an authorization which I know is not always easy to have from French houses, and the profession in America will now have the privilege of becoming acquainted with works which it has been my pleasant duty to notice in my "Chronicles" before this.

In "Principles of Surgery" the American author has introduced the translation of one volume of the "Encyclopœdia" of Prof. Cadéac, enlarged and rearranged.

The work is divided into two parts. After a concise preface, the first part, which is divided into eleven chapters, contains generalities arranged as follows: Chapter 1, regeneration and reparation; chapter 2, inflammation, anatomical process of inflammation; chapter 3, fever, pyrexia; chapter 4, gangrene, œdema, thrombosis and embolism, atrophy; chapter 5, bacteria, microscopic examination of bacteria, pyogenic microörganisms, specific surgical microörganisms; chapter 6, immunity, types of immunity, theories of immunity, opsonins, serums; chapter 7, surgical shock; chapter 8, hæmorrhage and hæmostasis; chapter 9, restraint; chapter 10, anæsthesia; chapter 11, asepsis and antisepsis, routine of wound treatment, practical asepsis, recommendations for aseptical operations. The second part is the one where the translation of Prof. Cadéac is to be found. This is arranged in only four chapters. In the first, all kinds of wounds are considered; in the second, abscesses, ulcers, fistula, septicæmia, pyæmia, tetanus, actinomycosis, botryomycosis; in the third chapter, melanosis, and in the last chapter some of the varieties of tumors, with a few of the diseases affecting the bony

tissues, rachitis, cachexia, osteoporosis, achondroplasia and sniffling disease of hogs.

The "Principles of Surgery" is well gotten up and well presented; it is illustrated with a little over a hundred figures, and by the annotations which the author has introduced in the second part he has rendered the work more valuable. If the contents of the first part may not be entirely original, and if the second is but a translation, the addition of the annotations is certainly from the author, and is a very good addition. Dr. Merillat's work will no doubt be a great assistant to students, and old practitioners will read it with pleasure.

* * *

"*Pathology and Differential Diagnosis of Injectious Diseases of Animals*"—such is the title that Prof. Veranus A. Moore, B. S., M. D., has had the amiability to send me. Second edition, revised and enlarged, the book is dedicated to Daniel Elmer Salmon, D. V. M., the late Chief of the B. A. I., who has written an introductory, where it is wisely remarked: "An elementary treatise on the pathology of the infectious diseases of animals has long been needed, not only by the students, but by members of the profession. . . . A work which supplies this need will be welcomed and appreciated."

Let us first look at the contents of the work. We find that they are divided into fourteen chapters. The first treats of generalities, such as etiology, infection, dissemination and classification of infectious diseases, and the classification of bacteria of Migula; then begins the series of diseases attributed to wound infection, with considerations on botryomycosis, omphalophlebitis, white scours in calves, infectious suppurative cellulitis, fistulous withers, etc. In the third chapter the diseases caused by bacteria, genus streptococcus, strangles, equine contagious pleuro-pneumonia, apoplectiform septicæmia in chickens, streptococcus mastitis. In the following chapter the affections due to bacteria, genus micrococcus, takosis. Chapter 5 contains the diseases due to bacteria, genus bacterium, pasteurelloses, swine plague, hæmorrhagic septicæmia in cattle, fowl cholera, anthrax,

glanders, etc. Chapter 6 treats of those caused by bacteria, genus bacillus, with hog cholera, tetanus, black-leg, foot-rot in sheep; bacteria of the family spirillacæ, with diseases caused by spirilla, are the subject of chapter 7, while in the 8th we find the diseases caused by fungi, actinomycosis, actinobacillosis, leeches, pneumonomycosis, epizoötic lymphangitis, farcy in cattle, mycotic stomatitis and blastomycetes infection in horses. Chapter 9 represents the diseases caused by protozoa, genus piroplasma, Texas fever, ictero-hæmaturia in sheep, equine malaria and canine malaria. The troubles due to the protozoa, genus amœba, are considered under the title of infectious entero-hepatitis in turkeys. The diseases due to protozoa, genus trypanosoma, surra, dourine, mal de caderas, and nagana occupy chapter 11, and finally in chapter 12 the consideration of the infectious diseases for which the specific cause is not yet determined—rinderpest, dog distemper, contagious pleuro-pneumonia in cattle, foot-and-mouth disease, rabies, influenza, etc. The last two chapters treat of immunity and protective inoculation and of disinfection.

As can be seen, the field covered by the author is very broad, and it certainly has demanded from its author a great deal of work. Those who know him, also know that this would not have stopped him, and to the question that might be asked, "Has he succeeded in his object,"—namely, in "the production of a book which will supply a need, stating briefly, clearly and comprehensively all that is known, and exclude all that is not," —the answer must be positively affirmative.

Well posted already by the many researches he has made and by the numerous investigations in which he has been engaged, selecting the positive facts and leaving aside all that still remains in doubt, Dr. Moore has given the profession of America a book which will impose its place among the best in American veterinary literature, and no doubt, as Dr. Salmon says in the introduction, it will be "welcome and appreciated."

This valuable publication is from the house of Taylor & Carpenter, of Ithaca, N. Y. A. L.

MEAN REFLECTIONS ON VETERINARY PROGRESS.

In less than half a century a veterinary profession has been built up in America which most of us are not ashamed of, and in which we have the greatest faith. If we are not abreast of some of the European countries in theory, we are in advance of most of them in practice and in surgical achievements. These facts are the more remarkable when it is considered that, although the first charter granted to a veterinary school in America was just fifty years ago, it is not much more than half this time since the teaching of veterinary science began in earnest. It is bootless here to recite the difficulties which beset the pathway of the pioneers, and how the devoted labors of a few earnest men prevailed against all obstacles, ever keeping in view the highest ideals, and striving to sow sound seed for the harvest of the future, frowning upon every act and sentiment which did not tend in that direction—struggling, pleading, urging, and employing every honorable means to place veterinary medicine upon the same level with the older and most advanced sciences. Step by step the cause for which they labored has moved toward a realization of these ambitions; and, although we are very far from idealism, we are proud of the progress made in these comparatively few years. No one who is conversant with veterinary educational conditions as they exist in some European countries can feel contentment when he compares them with those which maintain on this side of the Atlantic; but the student of educational progress must see in the majority of our schools a rapid advancement toward the realization of our hopes.

But while the major portion of our schools are working in the best interests of the cause as they see it, and under conditions as they find them, there are some so-called "colleges" which are a real hindrance to progress of any kind, and should be condemned by all who have our interests at heart. Therefore, while the great majority of the schools are working assiduously and to good purpose, to promote our moral and educational standard, there are others whose influence is in an

opposite direction, and it would be for the everlasting good of veterinary medicine if their doors were closed for all time.

One of these so-called "colleges" is sending broadcast advertising literature that would disgrace an itinerant "quack," and offering inducements to dupes that are in keeping with dime museum methods. From correspondents in various Western states we have received examples of the "stuff" that is being sent out by these "colleges." Here is a sample:

"After many years of great care and experiment we have at last found a remedy that will *cure Fistula* in all of its stages by being given internally. It has been known for a long time that fistula is caused by a germ, but the agent that would destroy that germ has been heretofore unknown. As all germs travel through the blood current, the only way to kill them is by some agent that will work against them in the blood. We have discovered this agent, which can be given to the animal either in the feed or drinking water. This is the only remedy that will positively cure. It is not an experiment, but a fact. Enough to treat an ordinary case will be sent prepaid on receipt of price. Full directions will be sent with each bottle. Prices: Single box, $5.00, prepaid, by express; half dozen boxes, $20.00, prepaid, by express; full dozen boxes, $36.00, prepaid, by express. Address ——— ——— College, ———."

Of course, the "graduates" of such "colleges" receive no recognition from any ethical veterinary organization in this country, and there are few states having laws regulating practice where they can impose themselves upon the public. While these few examples of the remains of the days of charlatanism do not affect the great body of the American veterinary profession, they constitute a thorn in its side which is very difficult to quickly pluck while dupes are found to support them. It is the bounden duty of the profession of the states which they disgrace to compel them by law, if possible, to abandon their practices or close their doors.

THE PROPOSED VETERINARY SCHOOL AT CHICAGO.

When in December the news was flashed over the wires that the packing interests of the Union Stock Yards in Chicago had

offered the University of Illinois a quarter of a million dollars to erect buildings and equip a great veterinary college for the especial training of inspectors for the Bureau of Animal Industry, it but confirmed the rumors in well-informed circles ever since the great upheaval of the late spring. Indeed, the *Breeder's Gazette* gave voice to the movement as long ago as July, and the REVIEW reprinted an editorial from that journal in its August number in which the very school which is now taking definite form was foreshadowed. In order to place our readers in possession of all available facts concerning the establishment of this school, the REVIEW sought the assistance of its special correspondent in Chicago, Dr. B. T. Woodward, of the Bureau of Animal Industry, and the results of his investigations will be found in a letter in this number, in the department of "Correspondence."

While it is stated that the primary object of the packing interests is the making of inspectors whose training shall be beyond criticism, it is certain that the University authorities will see to it that facilities are provided for the training of these men for all phases of veterinary science. It is quite out of reason to presume that the State of Illinois, one of the largest, if it does not stand first among the stock-raising states of the Union, will contribute the necessary funds to perfect men for the service of the National Government alone. She will take advantage of the generosity of the Stock Yards interests to equip a great veterinary school for the purpose of securing trained veterinarians to guard her vast live-stock industry.

And thus, as a result of the movement started through the sensational writings of a novice, we are to have in the heart of this great country, with the unexampled facilities of the largest abattoirs in the world, a veterinary school that will rank with the best of Europe, and, as is characteristic of aroused America, may eclipse every veterinary seat of learning on the earth. It may come to pass that, instead of villifying the author of "The Jungle," the veterinary profession at least may rise up and call him blessed.

ANATOMICAL GIFT TO THE NEW YORK-AMERICAN VETERINARY COLLEGE.

The splendid museum in connection with the above college, collected largely through the efforts of Prof. Liautard and the alumni of the school for the past thirty years, and which is undoubtedly the most extensive and valuable collection of specimens illustrative of comparative anatomy and pathology in America, has received a notable addition through the generosity of Mr. Oliver H. P. Belmont, of New York, who last month sent to the College as a gift a magnificent life-sized *papier maché* model of a horse. It was purchased for Mr. Belmont in Paris some years ago by Dr. J. Elmer Ryder, and is enclosed in an ornamental iron-framed, brass-trimmed, plate-glass case, which preserves the specimen in excellent shape. It is a most complete anatomical reproduction of the horse, and is detachable in 928 segments.

Such splendid generosity is of great service to veterinary science, and is thoroughly appreciated by the profession of the country, and the donor will always be remembered for his munificence and public spirit. The opportunity remains for some humanitarian philanthropist to bestow upon this grand old school, which has struggled unaided for so many years and to such good purpose in building up veterinary science, an adequate home for its fine museum, and for another such individual to endow it with sufficient funds to make it independent of student fees, and thus establish in the metropolis of the Western World a great veterinary department under the sheltering wings of New York University. No grander opportunity for doing good to mankind and the animal kingdom will present itself during the twentieth century.

TO ERADICATE THE SOUTHERN CATTLE TICK.

We are pleased to note that the good work inaugurated by the last Congress in appropriating a small sum (about $82,000) for the above purpose, is to be taken up with more vigor at the present session. Congressman Joseph E. Ransdell, who suc-

cessfully piloted the previous bill, has introduced a more pretentious measure in the House, by which the sum of $250,000 to fight this pestilence to the cattle industry of the Southland is appropriated. It is estimated that the tick causes an annual loss to the states south of the quarantine line of $40,000,000, and it is tardy justice to this section to make even the most strenuous efforts to drive the ticks from the infested herds and pasture lands.

INFECTION THROUGH INTESTINAL TRACT.

An important report by special investigators of the Bureau of Animal Industry (Drs. Schroder and Cotton) has been made public during the past month in which it is clearly shown that the food products obtained from cattle—particularly milk—are the most prolific source of human tuberculosis. This simple statement is sufficient to add the greatest weight to the contention of veterinary scientists upon some important points: That bovine tubercle bacilli are capable and do produce tuberculosis in the human family; that infection does occur through the ingestion of the milk and flesh of these animals; that the conclusions of Prof. Koch before the London Congress were wholly wrong; and that all animals reacting to tuberculin should be rigidly excluded from herds furnishing milk for alimentation.

SEASONABLE FELICITIES.

The REVIEW gratefully acknowledges the receipt of many letters and cards from veterinarians all over the world wishing it prosperity for the new year, and expressing the kindliest feelings and interest in the work in which it is engaged. To all of these thoughtful correspondents the REVIEW expresses its appreciation of their greetings, and assures them that their good opinion and words of encouragement are stimulants to greater efforts in behalf of our beloved profession. We trust and believe that the year just opened has in store for veterinary science many triumphs, and much that will result in the uplift of the cause of veterinary medicine.

ORIGINAL ARTICLES.

THE PRESENT CONDITION OF THE ANTITUBERCULOUS VACCINATION AND SEROTHERAPY.

By Prof. G. Moussu, Alfort, France.

(Translated by A. Liautard, M.D., V.M., from the *Recueil de Médecine Vèterinaire*, Nov. 16, 1906.

When, a year ago, at the end of the International Congress of Tuberculosis, Prof. Behring solemnly announced that he hoped to be soon able to handle with efficacy the terrible disease, tuberculosis, the feeling raised by such declaration was almost as great as the one that followed Prof. Koch's announcement, some fifteen years ago, that in discovering tuberculin he had also found the specific remedy to tuberculosis. Coming from an authority like Prof. Behring, such feeling was to be expected. Having established the principle of antidiphtheric serotherapy, there were good reasons to believe in his promises. Time has gone by and the specific remedy so loudly announced has not yet been found! Let us hope for the future; nothing is impossible. If it is not for to-morrow, perhaps for a near future.

A few months after, it was no longer the question of the cure of tuberculosis which was spoken of, but simply that of the antituberculous vaccination of cattle.

For several years Behring has predicted that he had found the antituberculous bovovaccination and that the time had come to see what services the method might render to the raising of cattle and with what profit to the agricultural world.

Here again time has gone by and the method has been controlled in most of the countries of Europe, and, for those who know how to interpret, there is a uniformity in the results which leaves no doubt.

The actual method of antituberculous bovovaccination is inefficacious and without practical value.

It is important to say it, and not to forget it, in the presence of the affirmations that have been produced and repeated for

eight or ten months in veterinary, agricultural, medical and other publications.

At any rate, there is no need of great astonishment, as this conclusion can only surprise badly informed or incautious persons.

The fault lays on the premature publication of apparent results, whose interpretation, to my ideas, had been absolutely inaccurate. I refer to the experiment of control, carried out in France and known as the experiment of Melun. Let us glance at the principle of the vaccination of Behring and to what has been done at Melun.

The bovovaccine of Behring is made with a culture of human tuberculosis, which he declares is but little virulent, but not as avirulent as it has been said. The technic of the vaccination has been modified since it has been introduced. Primitively (1902) the author recommended for intravenous inoculation doses of two milligrams of active virus for the first vaccine and of five milligrams for the second, inoculated one month apart. In 1904 these doses were raised to four milligrams for the first and to twenty milligrams for the second vaccine, inoculated always in homogenous emulsion in the veins, but after twelve weeks a part only. It is by this last method that the young animals of Melun were vaccinated, after being submitted to a test of tuberculin to be sure that they were free from tuberculosis. Then the animals were divided into three lots: the first to receive the *testing inoculation* by intravenous injection, the second by subcutaneous injections, and finally the third to be submitted to the only test which could have a practical value, namely, the long contamination by cohabitation with animals affected with open tuberculosis.

All of this was to be carried out with non-vaccinated witnesses, selected under conditions as identical as possible as far as age, breed, general condition, etc.

The test inoculation for the first and second lots was carried out three months after the second vaccination, in June, 1905, with doses of virulent cultures of bovine tuberculosis mathe-

matically measured by Prof. Vallée. The duration of the observation was six months and that part of the experiment ended in December, 1905.

What were the results? To all appearances, very brilliant; in reality, middling, when the facts are examined closely. Before the testing inoculation, the vaccinated were submitted to another tuberculination: one only reacted positively, and consequently giving rise to the supposition that he had been tuberculized by the vaccine.

Put aside and killed in December, 1905, he was found entirely free from disease. From this case and from those resulting from the negative reactions before the testing inoculation, it was very properly concluded *that the bovovaccine (used at Melun) had at least been inoffensive.*

To-day there are doubts, from the fact that the virus has not always been of an even fixity; the vaccine might be dangerous, as it was said in Germany some time ago.

This is of no great importance, as will be seen later on. At the slaughter of the subjects of the first series, those inoculated by intravenous injections, *four out of six* of the vaccinated presented nothing visible to the naked eye; in exploring the viscera or the lymphatic glands, two had small lesions of the gland of the posterior mediastinum; in one of the bronchial and of the mediastinal in the other.

With the witnesses, three had died with acute tuberculosis during the experiment; the three others, as was expected, had marked lesions of visceral tuberculosis.

The result for the vaccinated was neither perfect nor absolute, but *the apparent efficacy of the vaccine seemed undeniable.*

With the subjects of the second series, inoculated under the skin, the results were as follows:

For the witnesses, the infection extended as far as the lungs in five among them; with the two others it did not go beyond the entrance of the chest.

For the vaccinated, this infection remained in appearance localized to the point of inoculation with four of them; it

reached the prescapular gland in two, and slightly touched those of the entrance of the chest in one.

Again, then, *immunity seemed to be undoubtedly conferred by the vaccination*, although not so marked as in animals of the first series.

At that time, say towards the end of November, it had been suggested, among the members of the Commission, to kill all the animals in the experiment, without exception. Financial reasons were advanced, and for some members the duration of the experiment had been sufficient to have final results.

Prof. Vallée and I [Prof. Moussu] were of a different opinion, and I insisted, especially for the animals of the third series, those of the vaccinated, which it was proposed to contaminate by long cohabitation with animals having open tuberculosis. My opinion rested upon personal experiments and their results, which I made public at the Congress of Tuberculosis, and which were the results of four years' observations. Anyhow, it was for me the only part of the experiment which had a capital value, as it alone responded to the natural conditions of transmission of the disease. My suggestions were adopted; the vaccinated which were to be contaminated by cohabitation were not killed, and I can say to-day how pleased I am in having obtained that, otherwise the French experiment of control would have committed one of the greatest errors.

After the slaughter of the animals of the first two series in December, 1905, the rumor, indeed, was spread that vaccination of large cattle against bovine tuberculosis was a definite fact, and it found its way into veterinary, agricultural and medical papers, and even to the public at large, with the results that the promises of the German professor to deliver soon a curative remedy were hopefully expected.

To tell the truth, I must say that, nevertheless, the conclusions of the reporters of the experiment (Prof. Vallée and Mr. Rossignol), were less affirmative, they having only said that in the cases of the animals tested by venous and subcutaneous injections :

(a) The vaccination according to Behring's method is inoffensive for the animals kept during the time necessary for the immunization and the six consecutive weeks, when kept away from all accidental cause of infection.

(b) The method confers a resistance, truly considerable, to the most severe modes of experimental infection.

(c) The immunizing bacilli used by M. von Behring constitute true vaccines.

Against these conclusions and against the exaggerated optimism which is presented to those who are interested in the question, I will make the following remarks:

I desire to make some reserves upon the very interpretation of the facts observed and not discussed. Like my colleague, Vallée, I took at the time of the slaughter a certain number of samples of glands from the vaccinated subjects, to find out if, as I suspected already, these glands, in appearance healthy, did not contain living and virulent tuberculous bacilli. I took of each one only a small quantity, from one to one and a half grams, which was triturated with boiled water and inoculated into the thigh of guinea-pigs. These guinea-pigs became tuberculous and died in eight or ten weeks—result similar to that obtained by the reporter.

For the vaccinated, tested in the veins, I took glandular samples: from No. 78 the bronchial; from No. 79 the mediastinal; from No. 80 the mediastinal. These glands which seemed healthy, contained then also virulent bacilli and that in sufficiently large numbers, the quantities of substances used being very small.

Assuredly, it is incontestable that these were the bacilli of the testing inoculation, spread a little all over by the circulatory current and arrested in the thoracic glands. But I repeat that, for me this is a very alarming constatation, justifying certain reserve.

With the vaccinated, tested under the skin, I made my collection of samples in such a way as to have pulps of glands of the first, second, and of third degrees—that is to say, I took

from No. 35 the prescapular gland; from No. 36 the bronchial, and from No. 38 the mediastinal gland. All the guinea-pigs inoculated with these became tuberculous, like the preceding, and in the same length of time.

If the presence of bacilli of the testing inoculation is explained in the thoracic glands in animals tested, through the veins, it is a little less comprehensible for the animals tested under the skin, and for me, I repeat, this justifies reserve.

Your reporter thinks that there is no reason to attach great importance to these facts, because in the practice of vaccination, the vaccinated animals shall not be tested with inoculations in the veins or under the skin.

This is understood, but this testing inoculation shall be made under the form of contamination, either by the intestines or the respiratory tracts, if you place the vaccinated in a contaminated district—that is, where only the usefulness of the vaccination shall be real; and it is proper to ask, then, if these vaccinated will not entertain within themselves, and even for a long time, as at Melun, living and virulent bacilli in their pectoral, mesenteric and other lymphatic glands.

A first point, which is not contestable for the experiments under consideration, is *that six months after the vaccination, the bacilli of the testing inoculation had not been resorbed.*

Your reporter thinks that these bacilli will be resorbed in time, and that there is nothing surprising, as the vaccine itself takes a long time to be resorbed.

How do you know? It is not the reported experiments which demonstrate it, and, if I have some anxiety, it is because it is known that *the effects of vaccinations ordinarily diminish as the time of the vaccination gets further off.* Then, if it is the same for tuberculosis, what is it which will prove that these bacilli (or those that might penetrate by the digestive or the respiratory tracts) will not remain in latent life, until any organic depression may promote their evolution?

A second point seems to me deserving of some considerations in relation to the vaccinated, tested under the skin. Undoubt-

edly the vaccination has not been sufficient to immobilize at one place the bacilli introduced in the neck, as they have been found at some distance and as far as the glands of my samples of the third degree. Has there been simply a bacillar transport at some distance by the white globules? It is possible, but it is not proved, and one has well the right to ask if there has not been bacillar multiplication and very slow invasion all around.

These facts seem to me to impose very serious reserves, which time only will give the proof of, and of which it is premature to try to explain, with reasons that one would wish to be sure.

What pushes me towards these reserves is the current teaching of human tuberculosis, and I will say more, the teaching of the forms of human tuberculosis which pass as the least serious, the easiest to cure.

Let us take, for example, a child affected with coxalgia without other detectable lesion. He is treated, immobilized, put in plaster, submitted to excellent hygienic conditions, and after one or two years he seems cured. He returns to ordinary life. Five, eight, ten years later, the lameness reappears, the old trouble wakes up, and the lad has a suppurative centre at the old lesion. The bacilli, which were believed gone forever, had remained in latent life during years, to resume a new vitality under an influence which most commonly passes unnoticed. For vertebral tuberculosis, or Pott's disease, it is the same, and the facts are numerous. I will mention only one as example. It is that of a wealthy man, free from the material cares of life, who in his youth had Pott's disease, which seemed to be cured. *Fifty years after*, when sixty and some odd years old, he had a cold abscess of his old Pott's disease. This is a case, and a lesion in which the bacilli had had time to be destroyed, as the conditions of life had been most favorable to a final recovery, and yet this had failed to take place.

And, again, with glandular tuberculosis, recoveries are only apparent. I will mention the case of a young woman that I have known for twenty years, who, having had tuberculous

adenitis of the neck in her youth, appeared perfectly and completely cured under the influence of eminently favorable hygiene and conditions of life. She got married while in the best condition of health, became pregnant, had a slight complication of phlegmatia alba dolens, and a few weeks after, ten years after the disparition of the cervical adenitis, these returned as big, as serious, as alarming as before.

Similar facts are observed daily; there is not a physician who has not many such observations in his record book. Therefore, it is my opinion and I ask, if under these conditions the reserves that I have made upon the interpretation of the experimental conclusions were not widely justified.

Because vaccinated animals have not, during a period of six months, been able to resorb the virulent bacilli that they were inoculated with, it is right (I repeat it again) to ask if these bacilli would not develop and make lesions, if the animals were under the influence of any organic depression such as gestation, lactation, bad alimentation, intercurrent disease, etc. That which seems to still more justify my doubts is that the only vaccinated animal that seemed to be quite well, although he carried little lesions of broncho-pneumonia, became tuberculous.

I have hope in that vaccination, but I consider that it is premature to affirm to-day that it is practical.

Time will complete our instruction.

* * *

These observations, expressing without restriction my personal doubts, rested on indisputable data, on the different results obtained in foreign countries, and a little also on private researches, of which I will speak further on.

My colleague, Vallée, answered for these observations that there was no need to establish comparison between the altered virulent lesions, so-called cured, such as those that exist in coxalgic or Pottic individuals, and the glands, free from any constituted lesion, of the vaccinated animals against tuberculosis.

The differences of opinion still persist, because what appeared to me dangerous was the presence of living and virulent

bacilli; but I believe I remain alone in my incertitude, so pleasant it is to live with a new hope, even if unfounded.

However, I wished I had been in error, and it would, indeed, have been very desirable; unfortunately, the facts show me right. The portion of the experiment relating to the vaccinated that had been kept to be submitted to long cohabitation with individuals having open tuberculosis, has proved decisive and the results disastrous. One year of cohabitation and they were tuberculous: it means that the practical result of the Behring vaccination does not exist.

A first vaccinated animal, killed July 6, 1906, was tuberculous, with serious lesions of the bronchial, mediastinal and mesenteric glands and also pulmonary lesions.

A second, placed during six months in contact with an animal not very contaminating, has had glandular lesions, less marked than the other, which is not astonishing with the conditions of the experiment, but still certainly tuberculous, as proved by inoculations to guinea-pigs.

Finally, another vaccinated intravenously, tested by intravenous injection, one year after vaccination and kept since, died with generalized tuberculosis.

It would be useless to insist any more and to furnish more details which would show better the defects of the method.

Only one conclusion remains: *At the present hour, with the method of Behring, no practical antituberculous vaccination can be made.*

One will understand of what little importance it is now to discuss the duration of the immunization or to inquire what will become of the vaccinated in practice. I will not even agitate the question to know if, yes or no, the Behring vaccine can itself alone give rise to the evolution of lesions, as it has been recently advanced. All these, in my opinion, are without interest and of no importance; and as long as the method is no good, it had to be improved or another looked for.

Well, as I have already said, is there anything that can make this conclusion really surprising? No; the result was nearly

expected. Anyhow, it was only necessary to take into consideration what had been done and obtained in foreign countries, so as not to be carried away into unjustifiable expectations.

I will not and I could not report here all that has been said on the subject, but I must, however, give at least a general opinion.

In Germany, Lorenz, one of the first, lent the authority of his name to the method of the immunization of Behring, although his observations would not escape strict critics; but, from 1904, serious doubts were already expressed on the efficacy and on the innocuity of the vaccine, as shown by some conclusions adopted by the Congress of Naturalists of Breslau.

Klimmer (1904–1905) states that the practical attempts to vaccinate with the method of Behring have been followed in a great number of calves by tuberculous lesions.

Marks (1904) affirms that calves have died by accidents of inoculation.

But the authority of the men who were heading the movement was such that researches were kept up quietly, giving notwithstanding rise to comparatively favorable publications. Among those I will mention two of the most recent, to show how much opinions will differ, when comparison is made with what is published in different countries.

Strelinger (1906) who, during three years, has made observations in the domain of Prince Louis of Bavaria, is a convinced advocate of the method of Behring, and for him it is efficacious; but, besides, *it seems as if it can cure beginning alterations of tuberculosis!* And to justify his assertions he states that calves, that had primitively reacted to tuberculin, did not react after vaccination. This justification is insufficient; autopsies would be necessary, and it would be too good and perhaps asking too much of the vaccination, if it was so. At any rate, it would be contrary to what is known on the question of vaccination.

Romer, who may be considered as the voice-carrier of Behring, is much less affirmative. He says: "The method has not the pretention of conferring a high degree of immunity, allow-

ing bovines to resist to all kinds of inoculation, but has no other object than to allow animals not to contract tuberculosis in natural conditions. The results of rural practice only will allow to appreciate the entire value of the method."

Certainly we would not ask more, and it could be called perfect if it did answer to this simple promise, but in France it is just the animals that were submitted to the contamination by cohabitation which after one year only became tuberculous. In Belgium, with much less time, one of the vaccinated of the testing experiment became contaminated in the same way! Those were certainly natural conditions and the results were markedly unfavorable. To say that one must wait for the results of rural practice to appreciate the value of the method! Oh, no! Because forcibly the conditions of observation shall not be as severe, because the chances of contamination may vary whatever is done, and because it is well evident that if the chances of contamination are less the results will appear excellent without having more value. Could these results, even favorable, be called in opposition to those obtained by severe experiments? No! At any rate, Romer seems to have foreseen this, when he adds that the best results will be given with isolated animals, according to the method of Bang, it being possible to combine both methods.

This is a disguised acknowledgment (it looks so) of an expected and possible failure. Anyhow, is this the present general opinion in Germany? No. Since a year many contradictions have been raised with serious objections, and Behring has defended himself the best he could in taking advantage of the experiments of Melun. It is known to-day to what they are reduced, and, as I have said, they are about in accordance with those obtained elsewhere.

For a long time, Eber, of Leipzig, who was one of the first called to give his opinion on the value of the method, had lost faith, and recently Dammann, of Hanover, said to the Superior Council of Agriculture of Germany that, from all the data so far obtained, none had brought the solution of the problem—namely, that the Behring vaccination prevented tuberculous in-

fection such as might occur in the ordinary conditions of life in cattle.

The French experiments seem to us to solve the question, and *it is positively negative.*

In Hungaria, Prof. Hutyra has not obtained better results in his controlling experiments. All the vaccinated, at the post-mortem, presented tuberculous lesions, smaller, it is true, than in the witnesses, but sufficiently great to have killed one of the vaccinated during the experiment. More recent researches have shown him that, in a contaminated establishment, the percentage of the vaccinated that reacted to tuberculin after twenty months was about the same as that of those not vaccinated; hence the use of the vaccination in rural districts is in no way evident.

In Switzerland, Schlegel, who also had been called to control the method with one of the first animals vaccinated from Behring himself, does not give a more favorable opinion; and I may add, from what Prof. Zangger has told me, faith in the method is indeed very small.

In Italy, the researches of control do not allow the formation of an opinion; but in Belgium half of the vaccinated have presented at post-mortem tuberculous lesions after testing, and one of the vaccinated became tuberculous after five months only of cohabitation with subjects having open tuberculosis. As usual, the vaccinated had lesions less severe than the witnesses, which seems to be the general rule.

It is sufficient, we believe, to compare this ensemble of data to have the conviction that there is uniformity pretty well everywhere and *that the practical vaccination of cattle against tuberculosis is truly not found as yet.* However, is it to say that there is nothing in the method of Behring? Certainly not. But that which may be said positively is that the Professor of Marburg seems to have done no better than the few authors who in late years have worked to find an antituberculous vaccination. He has made a great deal more noise, and that is all.

The subject is not new, indeed, and it is a long time since

jennerization, Behring fashion, has been tried in using bacilli of a specie to transport them to another. Even the limit of what seemed practical in that direction has been resorted to, in using aviary bacilli in attempts at vaccination of mammalia; but the results did not answer the expectations. The use of naturally or artificially attenuated virus, which might have been compared to vaccines, was not followed with better results. And still, researches are going on and will be kept up without arrest until the near day, we hope, when a finally efficacious method will be found.

In America, de Schweinitz, some ten years ago, failed; but more recently, in 1905, Pearson and Gilliland drew the following conclusions from their observations: (1) That immunity is proportional to the number of vaccinations and to the quantity of utilized vaccine; (2) That the attempts of hypervaccination give a resistance *below the normal* to the point of producing a fatal toxæmia; (3) That the resistance of vaccinated, with identical doses, varies from one herd to another; (4) That the immunity conferred may last at least two years (?).

At the present hour, it is announced that Pearson has found a curative remedy for tuberculosis. [Pearson makes no such claim!—*Ed.*] So much the better, if this is finally true! But, before believing, let us wait for decisive proofs.

In Italy, Maragliano, continuing previous work, has affirmed at the Congress of Padua (1903) that it was possible to vaccinate animals with injections of dead bacilli from the peripherical centres, and that animals treated by this method would afterwards support very easily injections of living bacilli which would kill witnesses. It is with this method, more or less modified, that, in his laboratory at Genoa, he succeeded in making a serum which he says possesses an evident activity. Activity does not mean real specificity, and I do not believe that this serum has ever permitted recoveries that could not be looked for with proper hygienic means. To my knowledge, the method is not susceptible to receive an application in relation to practical vaccination.

In France, the most important work done on this question is certainly that of Prof. Arloing. His method differs sensibly from the others, as it is based on a special mode of culture of the tubercle bacillus. In cultivating this bacillus in the depth of the bouillons of cultures, he has proceeded sufficiently far to modify its biological properties and attenuate it to such a point that he hopes to transform it into vaccine virus. The results obtained so far are very encouraging, but, with a prudence that deserves all praise in a question of such importance, the learned professor of Lyon remains reserved for the conclusions to be drawn for the present.

In Germany, Koch and Schütz have more recently recommended the use of virulent cultures, simply diluted in physiological water, inoculated directly under the skin. Immunity would be obtained three months after the second vaccination.

Lignières, in Argentina, has also made attempts with the subcutaneous method. The negative results that it has given at Melun with the testing trial are known; no use to look in that direction.

I have myself, from 1900 to 1904, made many and various trials, and the conclusions I have come to, in 1904, are recorded in the report of the Commission of the Funds for Scientific Researches. They are about similar to those derived from the whole of the considerations above exposed.

With the different methods recommended to this day, *the resistance of the animals experimented with is reënforced, but no practical vaccination is made.*

The booming made around the method of vaccination of Prof. Behring will have for advantageous effects the increasing of the researches in the best fitted laboratories, and, let us hope, bring us nearer a good solution. Calmette and Guerin, starting from the fact that they have demonstrated that many pulmonary tuberculoses were of digestive origin, have thought to obtain an antitubercular vaccination through the digestive tract. With ingestions of bacilli dead, attenuated or deprived of virulency, taken in given doses, a very remarkable resistance

can be obtained. MM. Roux and Vallée (1906) have had, with a similar method, the same results.

Will the increase in the resistancy conferred by this method correspond to an efficacious and practical vaccination? Perhaps. But already it may be asked if the method by the digestive tract will be better than the others. Living bacilli are not modified, or very little, by the digestive secretions while they journey through the gastro-intestinal canal. *A priori*, one cannot well understand why this method would have a marked superiority over the others.

Let time do its work. Let us wait and hope patiently.

* * *

A few words on antituberculous serotherapy before closing.

In relation to serotherapy, fashion was at one time to resort to serum of animals considered primitively as refractory. In truth, all our domestic animals are not equally sensitive to the bacillus of Koch, and while some offer it an eminently favorable ground for its growth (cattle, dogs and goats), the others do it only with resistance (horses, donkeys, sheep). Yet none are refractory in the rigorous sense of the word. I have myself shown how contagion among goats was easy, when a first case occurred in a flock; I have even shown that it was possible, by simple cohabitation much prolonged to transmit it to sheep; others have insisted upon the facility with which dogs would become infected, and every one knows that cases of tuberculosis are not exceptional with horses. It is, then, starting from a wrong principle that in days gone by the serum of goats, of horses, donkeys or sheep was recommended, as the results proved it.

When the properties of commercial tuberculin were known and finally established, the idea came naturally to inquire if its injection in gradually increasing doses to healthy animals would not develop in their fluids a marked antitoxic power, which might be utilized in the treatment of tuberculosis. Failure was complete and absolute. Since that time, already so far away, the result has not varied, no matter what has been done and no

matter what special toxines, isolated by more or less complicated chemical processes, were used. Moreover, even in modifying the conditions of culture, as did Marmorek, it does not seem that products could be made which could either immunize or give birth to the production of an active serum. Maragliano, as I have recalled, asserts that the serum obtained by his method is possessed of an effective action, but no other experimentor of authority has come to confirm his affirmations.

More again, inoculations of aviary bacilli, of bacilli attenuated, scoured, avirulent or viiulent from mammalia, as subjects of experiment, have not up to the present time given any hope of the production of an active serum. The last communication on this point is given by MM. Lannelongue, Achard and Gaillard (1906), who believe they have at last obtained with the donkey a serum having a certain activity. Their opinion is based on the fact that the injection of their serum to guinea-pigs, tuberculized beforehand with tuberculosis of little virulency, had, when compared with witnesses, produced very noticeable prolongation of life in the animals treated. But a careful examination of their report shows that those treated did nevertheless become tuberculous, and that if they had lesions less extensive and manifest than the witnesses, it is not a sufficient reason to conclude that the specific activity of the serum is peculiarly weak, as long as the tuberculosis in question was one with exceptionally slow progress. On that side it does not seem that much progress has been made either.

In closing, I may say that I have also had the hope to be able to obtain a serum which would have an antituberculous activity, in realizing my cultures *in vivo*. Theoretically it seemed to me that with these cultures in filters in the peritoneal cavity of animals of experiment, which consequently, would be under the effect of a continued tuberculous intoxication through the filtration of poisons secreted by the bacilli, I would arrive better than by any other way to obtain the natural products susceptible to give immunity. Up to this day, and I have animals which have successive cultures *in vivo* for more than two

years, it does not seem as if my attempts will be crowned with success. The serum that I have been able to obtain has not presented any activity during the first year, and I do not dare say that at the present hour it is real.

Like MM. Lannelongue, Achard and Gaillard, I have obtained, principally since a year, noticeable prolongation of life, in guinea-pigs inoculated experimentally and treated in comparison with witnesses inoculated with the same doses, but I did not prevent them from becoming tuberculous. Consequently this is to say that if my serum has any activity it is very weak.

However, I have an observation that I desire to report. It is that of a small fox terrier, sick since about a year with natural tuberculosis, manifested by clinical signs and an injection of tuberculin, which on October 26, 1905, gave a reaction of 2.6°. For six months this dog has coughed all the time; has no appetite, and has arrived at a great state of emaciation, weighing 5 kilogs.030 on October 12, and 4 kilogs 250 December 7 following. Treated with potions of bromides, opiates and digitaline before I saw him, nothing had done him good. December 3, 1905, I injected in his flank 40 c.c. of the serum spoken of above; the 10th of the same month new injection of same dose under the skin of the back. On the 15th, the cough had diminished in frequency, in a noticeable manner. On 21st of same month, third dose of serum, 40 c.c.; January 10, 1906, again 20 c.c. At that date improvement was very marked, not only by the almost complete disappearance of the cough, but also by return of the appetite. The progressive loss of flesh seems arrested; January 10, the dog weighed 4 kilogs 450 grams. February 1, he again receives 20 c.c. of serum, and the same dose on the 20th. February 1 the weight was 4 kilogs 700 grams, and on the 15th of the month 5 kilogs 100 grams. March 2 having no more cough, he again received 30 c.c. of serum; his appetite was excellent, and he weighed on March 15, 5 kilogs 300 grams. Since that time he has not received any treatment; he was gay and his weight had gone up to 6

kilogs in these last months. At first sight, no one would believe him sick, and yet he is tuberculous, having given on July 11, 1906, a reaction of 2.5° with a new injection of tuberculin. Nevertheless, the favorable action of the serum seems undeniable, and at the present hour the good condition of health persists.

But with all that, I only conclude that the action of the serum must be very weak, if one takes in consideration the doses injected in proportion to the weight of the animal. I have never dared to make a similar attempt with a tuberculous human because, taking in consideration the proportionality based on the weight, quantities of no less than 200 cubic centimeters for doses or even every week, would be altogether impossible to realize in a practical point of view.

What, then, must be the conclusion from all that we have seen? The final result is certainly not brilliant and responds but little to the expectations promised by the loud and erroneous publications in political papers. Believing them, one at some moments could have fancied that it was as easy to vaccinate against tuberculosis as against small pox. It seemed as if the difficulty would have been only on the selection of the method to use.

Let us sincerely acknowledge that the method is yet to be found, for vaccination as well as for the treatment, and let us wish for those who suffer with the disease for a brighter and more hopeful future.

An Oklahoma paper relates the following incident as proof that a bird dog does not point by scent alone: A very intelligent setter came to a dead stand on a shadow of a wee swallow in the street, which was reflected from a telephone wire upon which the bird was sitting. The dog made a beautiful, patient stand that would have delighted the heart of a nimrod. After a long time the setter crept carefully up to the shadow and put his foot upon it. When he found out that he had been sold he crept silently away, and when you looked at him he would hang his head down in shame, with an apologetic grin, as if to say: "If you were a dog you would have done it, too."

ARECOLINE COMPARED WITH ESERINE IN THE TREATMENT OF EQUINE COLICS.

By Dr. W. H. Weathers, Watseca, Ill.

Presented to the Meeting of the Illinois State V. M. A., at Chicago, Dec. 4, 1906.

I have selected this subject, not for the purpose of introducing anything new in the treatment of colics, neither is it my intention of adding anything new to the therapeutics of these drugs. But, for the want of a better title to a review of my limited experience with the use of these agents in the treatment of impaction of the bowels and intestinal flatulence, I have given to my paper the above appellation.

To get down to practical facts, I have recorded a few of the cases experimented upon with each of these drugs.

Hearing and reading so many very gratifying reports from practitioners in the use of eserine in bowel affections, I went into the field very much pleased that such a quick cathartic could be employed in these cases. I therefore promptly began the use of eserine, and my first case was a brown draft mare, 8 years old, weighing about 1500 pounds. Was called Jan. 7, 1906, and found her presenting symptoms of impaction of the bowels. I saw her about 9 A. M.; owner said he found her sick when he got up that morning. I gave her 1 gr. of eserine sal. subcutaneously. In about five minutes she became uneasy, straining considerably, and going through the usual performances when eserine is given, with the exception that no flatus or fæces were passed. After about one hour the effects of the drug subsided and she was about the same as when I found her. No peristalsis perceptible. Raw linseed oil, carbonate of ammonia and nux vomica were administered at regular intervals until the following morning, when a second dose of eserine was administered—this time 1½ grs., by the trachea. I got the same results as before—a violent shaking up of the muscular system, but no passage. Went on with the oil and stimulant treatment, but could not get any peristaltic action. The mare died

about 48 hours after I found her, and post-mortem examination revealed a pretty severe case of impaction of the colon, but did not seem worse than an average case.

The next form of digestive trouble with which I tried eserine was a case of intestinal flatulence, in a bay draft mare, 12 years old, weight about 1600 pounds. Was called January 14, 1906, and found her very tympanitic, but did not think it necessary to use trocar at first. I gave 1 gr. of eserine by the trachea, hoping to relieve the bowels of some of the gas.

The drug acted upon the muscular system about as usual, and again no action of the bowels nor the expulsion of any gas. Used the trocar, gave salicylate of ammonia with other carminatives and antiferments, but there seemed to be no possible chance of escape for the gas by the rectum. This mare died about 16 hours after finding her, and post-mortem examination revealed diffused enteritis and the intestines very much distended with gas.

These are each about the typical cases of digestive derangements in which I have tried eserine, and have utterly failed in every case where I employed it. I used eserine on at least a dozen cases in succession and lost all of them. Most of the cases were impaction, but some were intestinal flatulence.

I became discouraged with the results and for some time resorted to slower and milder forms of treatment, with a fair amount of success. After using the milder forms of treatment, and passing many nights of slow worrying along with these cases, I partly recovered my shock from eserine, and decided to try arecoline, with still hopes of finding a quick cathartic with which to hasten the removal of some of the bowels' burden without having to wait so long.

My first case to try arecoline on was a gray Western gelding, 9 years old, weight about 1300 pounds. Was called at 9 P.M. and found him pawing, getting up and down, some tympany. I had treated this horse before and knew he was very hard to drench, being one of the worst Western kind; so I gave 1 gr. of arecoline subcutaneously, and in about 3 to 5 minutes sali-

vation began, followed by straining and uneasiness. He was taken out into the yard, where he rolled considerably, passing fæces several times and flatus almost continually. In about 45 minutes all tympany had disappeared, and he was as gaunt as if he had been driven on a hard drive.

Another case was a roadster gelding, 10 years old, weight about 1100 pounds. Had been driven 20 miles and refused food on arriving at the end of the journey. Was called about 11 A. M., but could not see him until 5 P. M. Found him uneasy, some tympany, but very little; pain of a subacute character, being what looked to me an all-night case. I administered 1 gr. of arecoline subcutaneously, and gave an injection of glycerine. The drug acted promptly and he passed fæces three or four times, some gas, and in less than an hour I was on my road home.

A bay mare, 11 years old, weighing about 1400 pounds, seemed to be suffering with impaction of the bowels. Owner stated had been running on corn stalks and had been sick three days. Had had about three pints of raw linseed oil when I saw her about 2 P. M. I gave her 1 gr. of arecoline, and got some fæces promptly and quite a little peristalsis. I followed with stimulating treatment, and the animal recovered in a few days.

Recently I was called out at 9 P. M., owner stating over the 'phone that he had a very sick mare. On arriving I found a gray draft mare, 9 years old, weight 1600 pounds. She was down and bloated very badly. My first thought was my trocar, but a second thought prompted me to try arecoline first. I administered 1 gr., and in about five minutes she began passing gas. This was kept up almost continuously for some time, when she became easy and, as the owner expressed it, "down about her right size." She was given a mixture of cannabis indica, sulphuric ether, oil turpentine and soda hyposulphite. I returned home and had no further trouble.

These are a few of the cases as I have found them, and the results obtained from each of these drugs. The one has been a

complete failure with me, the other very gratifying in its effects.

Have I been unfortunate in finding a series of fatal cases while using the one, and fortunate while using the other? Or have I not administered the eserine properly? This is what prompted me to write this paper.

A LARGE NUMBER OF VETERINARIANS from various sections of the country, particularly from the West, attended the International Stock Show in Chicago in December.

WHAT'S THE USE?—It is estimated that shipping sickness and complications growing out of that ailment cause a loss of $150,000 annually to dealers in horses in New York. Scarcely a sales stable escapes its ravages, and despite the employment of the best veterinary talent, with well-equipped hospitals for the care of sick horses, some of the larger establishments lose heavily. To find an effective cure or preventive of shipping sickness has been the constant study of horsemen. Little success has attended their efforts, however, unless C. Berg, the manager of Fiss, Doerr & Carroll's Brooklyn branch, is right in his belief that he has solved the problem. Mr. Berg lost his full share of horses until last July. Since then not one has died—a remarkable record in a stable where green ones are coming in at the rate of a carload a week all through the busy season. The Brooklyn dealer attributes his immunity from loss to a course of treatment prescribed by a tramp veterinary surgeon who wandered into his stable last summer in search of an odd job. The man was a wreck himself, but he proved his knowledge of medicine by curing in forty-eight hours a case of pneumonia which had been pronounced hopeless by the veterinarian regularly employed. He told Mr. Berg that he had been with the British army through the Boer war in Africa and had there learned the secret of successfully treating horses for shipping sickness. He was given a trial and he "made good" so completely that Fiss, Doerr & Carroll's representative finally fitted him out with a new wardrobe and paid his fare back to England in consideration of learning the treatment. Since then Mr. Berg has dispensed with the services of a veterinarian and has scarcely had a sick horse. He says he does not wait for the green ones coming in from the West to get sick, but gives them the remedy on arrival, and always with good results. —(*New York Herald, Dec. 30.*)

MODERN VETERINARY METHODS.*

By Walter J. Taylor, D. V. M., Ithaca, N. Y.

DIFFERENTIAL DIAGNOSIS.

GLANDERS.

The earliest recorded reference to glanders is found in the writings of Aristotle, who describes a disease of the ass under the term *melis*. The description is meagre, but the same author has been credited with a knowledge of farcy owing to his statements that horses develop abscesses.

In the writings of the next six centuries no reference to glanders or farcy has been found, and the disease is next mentioned by Apsyrtus, who lived during the fourth century of the Christian era. Apsyrtus described four forms of the disease; moist, dry, articular and subcutaneous. It is probable that the first of these was what we know as glanders and the last farcy. He believed that the disease was contagious and recommended the segregation of affected animals, but described it as an easily curable disease.

Glanders appears to have been known to Hippocrates, who was a contemporary of Apsyrtus. He is said to have pronounced the disease incurable during its advanced stages.

Vegetius, who wrote a century later than Apsyrtus, seems to have distinguished glanders by terming it *malleus*, and farcy under the name of *humidus farciminosus*. It is interesting to note that Vegetius recognized the contagiousness of glanders and recommended the isolation of the suspected as well as the actually diseased animals.

Glanders and farcy are mentioned in the writings of various authors during the next ten centuries. Fitzherbert was the first English author recording observations on the subject. In 1523 he described both glanders and farcy. Markham in 1662, Solleysel in 1667, Gibson in 1751, and many others in the latter part of the eighteenth century have written descriptions of glanders and farcy, but they all treated them as two distinct diseases.

Erik Viborg, writing in the latter half of the eighteenth century, appears to have been the first to contend that glanders and farcy had a common contagium. He showed by experi-

*This series of articles was begun in the December Review, the first installment being on "Diagnosis;" that for January treated of "Differential Diagnosis," with "Tuberculosis" as the special subject.—[Editor.]

mentation that the two diseases were identical as regards etiology.

The specific cause of glanders is now known to be *Bacterium mallei.* It was first isolated and carefully described by Loeffler and Schütz in 1882. This organism is found in the recent nodules, in the discharge from the nostrils and in the pus from the specific ulcers.

Symptoms.—Two forms of glanders have been recognized, namely, acute and chronic.

Acute Glanders.—Acute glanders is common in the ass and mule, but rarely encountered in the horse. The period of incubation is short. The attack is heralded by a chill, followed by an elevation of temperature, and a profuse mucopurulent sticky discharge from the nose. This discharge may or may not be streaked with blood. If unilateral the margin of the nostril swells, the mucosa is dark red, infiltrated, marked with pea-like, yellowish elevations with red areolæ, becoming eroded in a few days and forming spreading ulcers. The submaxillary lymphatic glands on the affected side become enlarged. Often, however, a uniform swelling of the intermaxillary space takes place. The course is rapid and death ensues in from the sixth to the fifteenth day. This form rarely if ever becomes chronic.

Chronic Glanders.—This form of glanders seems to offer the most difficulty of correct diagnosis, inasmuch as the lesions may be of a latent character and misleading to a large degree. From an economic point of view, a correct diagnosis of this form is of far greater importance in sanitary work than the acute type, as it is the chronic cases, as a rule, that play the most prominent part in the spreading of the contagion. If the patient is well fed and cared for and not overworked, the malady may run a course of three, five or seven years, and the victim may pass through many hands, leaving infection in every stable it occupies.

In chronic glanders the nasal discharge may be not unlike that of the acute type. On the other hand, in some indolent cases the nostrils may be clean, but if there is matting of the long hairs, or adhesion of the alæ nasi, the case is especially suspicious.

The nasal mucosa is usually congested, of a dark reddish color and sprinkled with superficial or deep ulcers, clean or covered with crusts. Another lesion frequently observed in indolent cases is a cicatricial white spot or patch in which a slight hyperplasia has taken place and which might be mistaken for

glanders, but which shows no tendency to ulcerate. The mucosa may be drawn or puckered at this point, making the illusion all the more complete.

Rarely the submaxillary lymph glands only are diseased. In other cases there is only a cough, the latent lesions being confined to the lungs. In still others, the lesions may be confined to some internal organ. Objective symptoms may or may not be present.

Farcy.—Cutaneous glanders or farcy may be observed in either the acute or chronic form. Acute farcy is liable to show itself in the cutaneous lymphatics of one limb, usually a hind one, in the form of firm cords with degenerating or ulcerous nodules, giving rise to the well-known *farcy buds.* These swellings arise from the lymphatics usually following the course of the veins which are accompanied by the larger lymphatic vessels. In the hind limbs the branches of the saphena are the ones commonly affected, extending from below upward, the first nodules appearing upon the fetlock or the hock.

The chronic type is often less characteristic, yet may be detected by careful observation of the symptoms. The main symptom may be the swelling of a joint. The swollen cord-like lymphatic vessels, in the hind limb, usually follow the course of the flexor tendons on the inner side of the digit, metacarpus and thigh. The cord-like swellings may appear also on the ventral surface of the trunk, and in connection with groups of lymphatic glands may give rise to large intermuscular abscesses.

Differential Diagnosis.

Glanders is to be differentiated from a variety of nasal and lymphatic disorders of the horse kind, such as chronic nasal catarrh, strangles, lymphangitis and the like. As in tuberculosis, if a positive diagnosis cannot be made from the symptoms and lesions in evidence, several specific means are available. Since the discovery of practically positive means of diagnosis, it does not seem wise to speculate upon the chances of a correct differential determination by obscure clinical evidences.

Diagnosis in the Live Animal.—Besides the means already pointed out, we may in case of doubtful diagnosis resort to either the mallein or serum tests, or to animal inoculation.

1. *The Mallein Test for Glanders.*—This is not unlike the tuberculin test for tuberculosis. The average normal temperature of the animal to be tested should be determined previous

to the injection of the mallein. The reaction is as follows: In a few hours there forms at the place of injection a hot, inflammatory swelling. It is very painful and in case of glanders quite large. From all sides of the swelling there may radiate wavy lines consisting of swollen lymphatics, hot and painful when touched, extending toward the adjoining glands. When the mallein injection is made aseptically, this swelling never suppurates, but increases in size during a period of from 24 to 36 hours and persists for several days, when it gradually diminishes and finally disappears at the end of eight or ten days. With the appearance of the local swelling the patient becomes dull and dejected, the eyes have an anxious expression, the coat is lustreless, the flanks contracted, the respiration hurried and the appetite is impaired. Frequent shudders are observed to pass through the muscles of the fore legs and sometimes the trunk is subject to violent convulsive movements. The most active and fractious horses become listless and indifferent to their surroundings. Differences in the intensity of these symptoms are observed, but they are never completely absent.

The temperature reaction never fails to show itself. In about eight hours after the injection of mallein the temperature of a glandered horse gradually rises 1.5°, 2°, or 2.5° F., and even more above the normal. The rise in temperature usually attains its maximum between the tenth and twelfth hour after the injection of the mallein. The reaction persists for from 24 to 48 hours and in some cases the high temperature remains for several days. The temperature should be taken every two hours, beginning at the eighth and going to the twentieth hour after injection. It is often sufficient for diagnostic purposes to take the temperature but four times, viz., at 9, 12, 15 and 18 hours after the injection.

In healthy horses the injection of mallein, even in a much larger dose, produces no effect on the temperature or general condition of the animal. There is produced, however, at the point of injection, a small œdematous swelling, somewhat hot and painful to the touch, but the œdema, instead of increasing, diminishes rapidly and disappears in less than twenty-four hours.

The use of mallein in animals already suffering from an abnormally high or low temperature would be imprudent. The necessary precautions should also be observed that animals be removed as far as possible from atmospheric variations and the influence of strong sunlight, fog, rain and currents of air.

2. *The Serum Test for Glanders.*—A much more convenient and quite as accurate test for glanders is to be had in the serum test. Three very striking advantages are to be found in the serum test, which favor this method of diagnosis:

(a) The animal is not temporarily incapacitated.

(b) It can be used in those cases where there is a rise of temperature, and consequently where mallein could not be safely employed.

(c) The method may be employed, using the blood from the dead as well as the live subject.

The serum test for glanders in brief is as follows: Ten to fifteen cubic centimetres of blood are drawn from the jugular vein of the suspected animal and sent to the laboratory. A suitable culture of *Bacterium mallei* is washed from an agar growth 24 to 48 hours old into a carbolized salt solution and placed in a thermostat at 65° C. for two hours, which kills the organisms. After heating the mixture is filtered through sterile cotton and diluted to the proper consistency, making what is termed the test fluid. The serum from the blood is then diluted to the desired proportion and mixed with the test fluid.* If the suspected blood is from a glandered horse, a reaction occurs at a dilution of 1–800 and higher. If the animal is not glandered, a reaction is seldom observed above 1–400, more frequently lower.

It should be noted that the serum test is strictly a laboratory method. As pointed out by McFadyean in 1896, "it has the advantage of being serviceable on the dead subject." It may therefore be used in cases where a questionable clinical diagnosis has been made prior to the death of the animal.

3. *Animal Inoculation.*—Of the test animals, guinea-pigs and field-mice are the most susceptible. The Strauss method consists in the use of the male guinea-pig for diagnostic purposes. A little of the suspected nasal discharge, the purulent contents of an ulcer or the suspicious nodule may be used. In using the nasal or ulcerous discharge, it is well to mix it with a few cubic centimetres of sterile water or sterile bouillon. From ½ to 2 c.c. of the mixture may be injected intraperitoneally or subcutaneously. In using a suspected nodule, the same manipulations may be employed as pointed out for suspected tuberculosis.

The guinea-pig usually succumbs in eight to ten days when

*The Agglutination Method for the Diagnosis of Glanders. Moore, Taylor and Giltner. AMERICAN VETERINARY REVIEW, Vol. XXX, P. 803. 1906.

inoculated with a virulent organism of glanders. The male invariably shows a pronounced orchitis. A pure culture of *Bacterium mallei* procured from the testicular abscess proves conclusively that the suspected animal was suffering from some form of glanders.

Lesions.—The post-mortem findings in glanders are often misleading. The perceptible lesions found in slaughtered animals which have given a decided reaction to the mallein or agglutination tests may be so slight or so remote that unless one is familiar with the possible location of the lesions a doubt may be entertained as to the reliability of either or both tests. In glanders as well as in tuberculosis it has been found by careful observers that even a very slight lesion may give rise to a decided reaction to the specific tests.

In chronic glanders, the most frequent location of the lesions is on the respiratory mucous membrane, in the lungs, lymph glands and skin. McFadyean states that he has never seen a case of glanders in which lesions were found in which the lungs were not affected. Other organs are more rarely invaded. Circumscribed nodules with the formation of ulcers and cicatrices or diffuse or infiltrated lesions usually occur in the mucous membrane of the upper respiratory passages.

In nodular glanders, which is the common form, the lesions are most frequently situated in the upper portion of the nasal septum and in the cavities of the turbinated bones. In the nodular form the lungs contain nodules varying in size from a millet seed to that of a pea. They are gray by transmitted light, glassy and pearl gray by reflected light, and are surrounded by a congested or a hæmorrhagic ring. By passing the finger over the serous surface of the lung a sensation is imparted much the same as in passing it over a bag of shot. The centre of the nodule shows a pale yellow point in consequence of caseation and disintegration of the innermost cells.

Infiltrated glanders of the lungs form tumors from the size of a walnut to that of a child's head, consisting of a diffuse glanderous infiltration of the alveoli and of the interstitial connective tissue. Frequently on section the infiltrated parts of the lungs resemble very closely a soft sarcoma. They are of a dirty white color, of a gelatinous, juicy consistency, and irregular in shape. They may either become indurated so as to form hard, connective tissue-like new growths, or they may become gangrenous.

In skin glanders (farcy) the nodules are found in the papil-

lary layer. The cutaneous nodules vary in size from a hemp seed up to that of a pea. The nodules in the subcutis are as a rule metastatic tumors varying in size from that of a pea to a hen's egg. In rare cases secondary chronic farcy occurs. It is marked by a large, diffuse new growth of connective tissue with nodular thickening of the skin. This condition is termed glanderous elephantiasis or pachyderma. It chiefly affects the limbs and head. Rarely diffuse gangrene of the skin occurs.

Of the abdominal organs the spleen is most frequently affected. When so affected it contains embolic nodules, which vary in size and either suppurate or become calcareous. Similar nodules occur though not so often, in the liver, kidneys, testicles, brain, muscles, heart and bones.

Structure of a Glanderous Lung Nodule.—The histological structure of a glanders nodule in the lung is quite constant. It usually consists of a central part composed of leucocytes that have filled the air spaces, the walls of which have disappeared as if by liquefaction. This is surrounded by a zone of epitheloid cells. A third zone surrounds this in which the walls of the air vesicles are recognizable. The fourth zone is composed of air vesicles filled with a fibrinous exudate which entangles a few leucocytes. This zone passes gradually into the normal tissue. A peculiar property of a glanderous nodule consists in the disintegration of the nucleus before the destruction of the cell body and the retention of the staining property of the broken, nuclear chromatin. This form of cell necrosis has been designated by Una as chromatolais.

Glanders in Man.—From a sanitary viewpoint, glanders is one of the most important infectious diseases of animals because it is directly communicable to man. Slight abrasions of the skin and especially of the hands have been known to form a channel through which the human subject has contracted this most dreaded malady. The symptoms of glanders in man are of much importance to the veterinarian. Although man's susceptibility to the disease is not very great, cases of human glanders unfortunately occur. It has been especially noted among veterinarians and those having the care of horses. The parts usually first affected are the hands, nasal mucosa, lips and conjunctiva. After a period of incubation of from three to five days, the affected part becomes swollen and painful with subsequent inflammation of the lymph vessels and swelling of the glands. Fever is often the first symptom, and it is nearly

always followed by a nasal discharge, pustules in the skin, ulcers of the oral cavity, larynx and conjunctiva. As a rule, death takes place in from two to four weeks and occasionally in a few days. Treatment is usually of no avail. A few cases purely local in their manifestations have been reported cured by deep cauterization.

(To be continued.)

MARRIAGES.—Dr. Carl W. Gay, D. V. M. (N. Y. S.V. C. '01), of the Veterinary Department of the Ohio State University, was married Dec. 17 to Miss Catherine Emily Andrews, of Columbus, O. . . . Dr. Peter Simonson, President of the Nebraska State Veterinary Medical Association, was married in November. . . . Dr. W. E. Martin, of Perry, Mo., was married Nov. 28 to Miss Cordelia Kirtlink, of Hannibal, Mo.

THE "REVIEW" APPRECIATED IN THE FAR WEST.—A letter from Dr. D. D. Keeler, Salem, Oregon, under date of Dec. 20, says: "Some of our veterinarians are getting along without the best veterinary paper published in the United States, but I cannot see how they do it, and I am surprised how the AMERICAN VETERINARY REVIEW can be furnished so cheaply, with so many good things contained in it. It would have to be more than double in price before I could begin to think that I could do without it. I read and sometimes reread it with a relish, and each time can learn something new and useful. Its standard is high, and I am sure its editors will never let that standard be lowered, but will ever be found raising it higher."

THE PENALTIES OF WAR AND THE REWARDS OF PEACE.—A private letter from Dr. Nelson S. Mayo, chief of the Bureau of Animal Industry of Cuba, thus describes the stirring scenes around the seat of his headquarters at Santiago de las Vegas: "On my return from 'the States' in September, I found myself director *interino* of this station and the place in the hands of the rebels. We had from 200 to 500 encamped here for nearly three weeks. The greatest 'battle' of the campaign (Wajay) was fought about two miles from here. The rebels did but little damage here, aside from stealing a few horses and pigs. Dr. Dimock and I treated their wounded, both horses and men, and when they disbanded we were thanked in 'General Orders Constitutional Army of Cuba,' and the commanding 'general' presented me with his campaign 'machete' as a souvenir of the occasion."

MODES OF TUBERCULAR INFECTION IN WILD ANIMALS IN CAPTIVITY.

By W. Reid Blair, D. V. S.,

Veterinarian and Pathologist, Zoölogical Park, New York City.

When a generally received opinion is made the subject of a careful investigation it not infrequently proves to be erroneous. This is particularly true of tuberculosis among monkeys. The general public holds the belief—and, strange to say, it is sometimes indorsed by ill-informed members of the medical profession—that the majority of all monkeys in zoölogical collections die from tuberculosis.

After careful investigation of the diseases of wild animals in captivity, we fail to find any reasonable excuse for so widely spread an error. There has been entirely too much theory, and too little observation and record of facts in treating wild animals, and it is mere speculation to say from what diseases they might or might not die.

In the absence of the more positive information which one acquires from a long series of experiments designed for the purpose of ascertaining the priority, and manner of invasion of tuberculosis, much of this information, regarding the progress of the lesions, has been gathered from post-mortem examinations of natural cases. This is particularly the case in animals whose price has prevented them from figuring largely in experimental pathology.

As the existence of tuberculosis is determined by the presence of tubercle bacillus, which produces the disease, consequently it is only since the characters of this were made known that we have been able to make an absolute diagnosis in suspected cases.

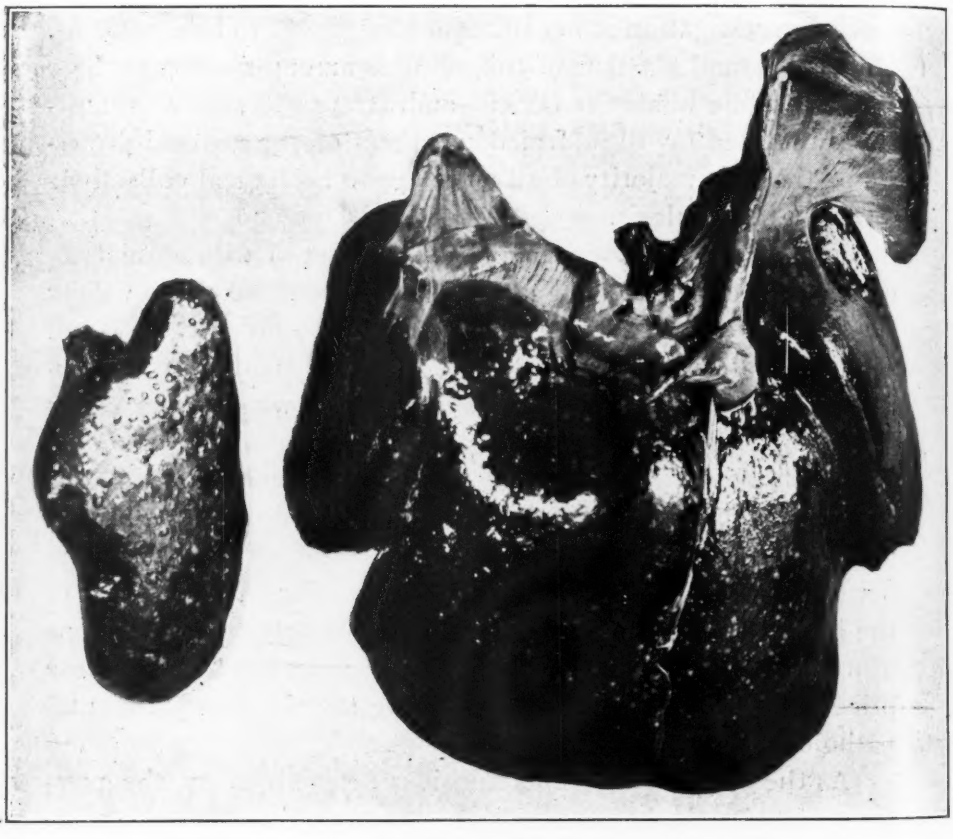
The identity of tuberculosis in human beings and that of certain animals, and the possibility of one infecting the other, renders this disease of the greatest importance.

The great difficulty in determining when the animal first be-

comes tuberculous makes it practically impossible to prevent the possibility of infection to its companions. Particularly is this danger greater among primates, where it is necessary to confine from 6 to 10, or even more, in one cage.

ANIMALS AFFECTED.

While it is quite safe to say that hardly any animal possesses



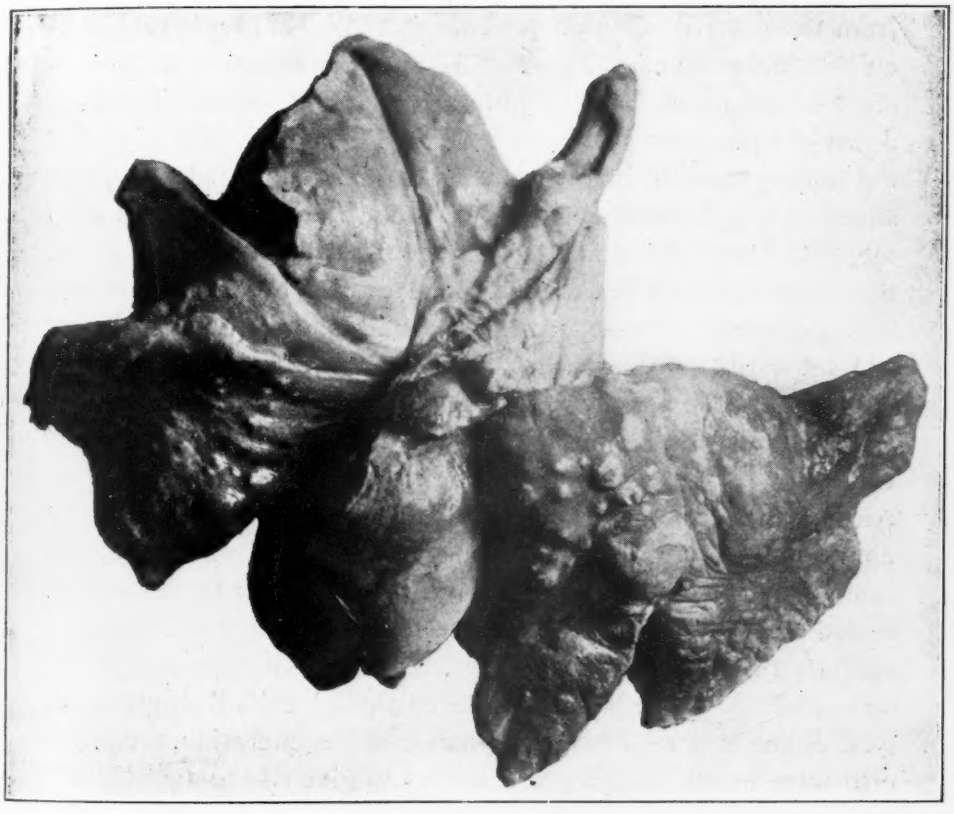
MILIARY TUBERCULOSIS. LIVER AND SPLEEN FROM A MONKEY.

absolute immunity from tuberculosis, certain species and individuals are undoubtedly less susceptible than others.

My investigations from necessity have been confined to the animals in the primate collection, owing to the fact that, with one or two exceptions, the animals in the park outside the primates, have been free from this disease. The experimental

work along this line is not complete, but the facts already gathered are of importance.

The examinations were conducted as follows: As soon after death as possible the animal was opened, the trachea from the larynx to its bifurcation was ligatured at each end and removed. Smears and scrapings were then taken, under sterile conditions,



TUBERCULOSIS OF THE LUNGS. FROM A MONKEY.

from the mucous membrane, 5 to 6 slides used in each instance. A like number of specimens were taken from the nostrils, under the same conditions, at the same time. Smears were taken from the living animals by the means of small cotton swabs applied to the mucous membrane of the throat or nostrils.

Smears taken from the nostrils of suspected cases, and those

that showed no clinical signs whatever, were interesting in demonstrating that at one time the bacilli were present in great numbers, while at other times (intervals of one or two weeks) we find them few in number or wholly absent in the same animal, hence it would seem that too great reliance cannot be placed on the occurrence of bacilli in the nostrils as indicating a diseased animal, for in several instances bacilli were found in the secretions from the nostrils when on careful autopsy no evidences of tuberculosis were found. The bacilli were found to be fairly constant in advanced cases of pulmonary lesions where breaking down of tissue was a distinct feature. Coughing is rarely present among these animals, even in the most advanced cases, but sneezing is quite frequent even in health, and this, it seems to me, is the most prolific source of dissemination of the contagium. Since the bacilli when dried may be carried by currents of air, it is not necessary that healthy animals should come in direct contact with the tuberculous cases to become infected.

Without the *Bacillus tuberculosis* the disease cannot be contracted even by the most weakly animal, but it is equally true that with its presence in a building, or in the body of a companion, the strongest is not absolutely free from the danger of contagion. Notwithstanding the frequency of extensive pulmonary lesion, the trachea, larynx, and pharynx are seldom affected with tuberculosis in these animals. I found lesions in the larynx in only one instance, but in three cases discovered an occasional bacillus within the epithelial cells lining this organ. Some appeared to be in process of degeneration. The bacilli were never in sufficient numbers to give rise to any distinct lesions. Two of these cases had no lesions of tuberculosis present in any part of the body on examination. This fact would seem to indicate that the lining cells of the trachea and larynx possess considerable phagocytic power.

PRIMARY INFECTION BY INHALATION.

In a large percentage of the cases examined the lungs with their lymph glands (especially the nodes situated at bifurcation

of tracheæ) showed calcareous deposits, while other lymphatic nodes were œdematous or in process of caseation. I am led to believe that primary infection takes place, in the great majority of cases, by way of the respiratory tract. It seems to me probable that tubercle bacilli enter the lungs and pass to communicating glands without giving rise to preliminary lesions of the organ with which they first come in contact.

Of the smears taken from different parts of the larynx and trachea, where pulmonary tuberculosis existed, in over 90 per cent. of the cases tubercle bacilli were found in all parts of the tube.

In a small number of cases tubercle bacilli could not be found in the trachea, though the lungs showed far advanced tuberculosis, the tubercles showing calcareous degeneration. In one instance (that of a small macaque monkey), one lung was totally functionless, appearing as a large calcareous mass attached firmly to the costal pleura; the other being only moderately affected; yet the animal was apparently well nourished, as evidenced by the amount of flesh and fat present. In this case I was unable to demonstrate the bacillus in the trachea.

An interesting case was that of a spotted lemur which was slightly injured, necessitating its isolation temporarily in the hospital room. This animal presented a fairly healthy appearance, excepting for the injury, with no clinical symptoms whatever which led me to have the slightest suspicion that the animal was tuberculous. Six smears were taken from the throat and nostrils, all of which showed tubercle bacilli in abundance, those of the throat being particularly numerous. This animal was never again put on exhibition, and I did not have to wait long to confirm my diagnosis, as the animal died within a few days. The autopsy showed far-advanced pulmonary, pleural, and pericardial tuberculosis. No lesions were present in other organs.

INFECTION BY INGESTION.

While one must take into consideration the possibility of

primary invasion taking place by the intestinal canal, through the bacilli taken in with food, or contaminated drinking water, this, in my opinion, is not the common source of infection, but that the intestines and abdominal organs are usually infected secondarily, through the breaking down of tubercular deposits in the lungs, finding their way into the bronchial tubes, finally reaching the throat, the animal swallowing the secretion containing the bacilli in great numbers, some of which would doubtless escape the action of the gastric juices, pass on to the intestines, and if in sufficient number produce tubercular enteritis, or they might pass to the mesenteric glands without producing any lesions whatever in the intestines.

Experimental evidence apparently shows that a relatively large number of bacilli are necessary to experimentally infect healthy animals by ingestion. Probably if the mucous membrane be not intact a smaller number of the bacilli would suffice. The rarity or total absence of tubercular lesions in the stomach would indicate that the gastric juices possess power to prevent the growth of the bacilli.

Specimen smears were taken from the œsophagus at the middle and lower third. Although I have made numerous smears, I have in only a few instances found the bacilli to be in great numbers, and in a large percentage of cases none were present.

The method used in staining was that of Gabbets. After spreading the material in the finest possible film upon the glass slide, a fluid composed of 100 grams of a 5 per cent. aqueous solution of carbolic acid, and 10 grams of absolute alcohol, in which 1 gram of carbo-fuchsin had been dissolved; a few drops of this solution were poured over the film side of slide and heated for two minutes, or until steam arose from the stain. It was then placed for about one minute in a mixture of 100 grams of a 25 per cent. solution of sulphuric acid in which 2 grams of methylene blue had been dissolved. It was next rinsed in alcohol, and mounted in Canada balsam, microscopic examination with 1·12 oil emersion lens used. By this convenient method

the bacilli appear red or pink, and the surrounding tissue blue or greenish in color.

CONCLUSION.

Our observations have been conducted with particular interest in regard to this disease, and we have apparently established certain facts in relation to it. I am fully convinced that the average case of monkey tuberculosis has been contracted before the animals reach us at the Park, contracted either under the unfavorable conditions usual in the quarters of the dealers, or under the still more unhygienic surroundings prevailing in transit—the primary infection taking place generally in the cervical and bronchial lymph nodes, and the extension of the disease usually following as metastases from these foci. This also is, no doubt, the most frequent story in the pulmonary tuberculosis of children, which simulates closely in many particulars the history of the disease as we find it among the monkeys. Pulmonary tuberculosis is by far the most frequent form of the disease as in man, but other types of the disease have been observed, as typical primary intestinal tuberculosis and pure cases of lymphatic tuberculosis. In these instances the lymph nodes and the spleen are the most frequent sites of the disease, the liver and kidneys becoming involved later. Generally cases of lymphatic tuberculosis terminate with pulmonary involvement, though sometimes otherwise, as by tubercular meningitis.

The general character of the lesions produced in simian tuberculosis corresponds very closely to those of the human, and the bacilli found also simulate morphologically those of the human infection. However, no comparative biological tests have as yet been made by us. Chronic tubercular lesions are much more infrequent in the monkey, and the pronounced fibroid changes of pulmonary tuberculosis as found in man have never been observed by me in the monkey; neither does one frequently find healed tubercular lesions in the tissues, particularly in the lungs of these animals, as in man. In man dying of other than tubercular disease, healed tubercles are present in

from 50 per cent. to 80 per cent. of cases. I think we may infer from these facts that the disease is of a much more virulent form in the monkey, and that the rule is death in infected animals, while in man the average case recovers. This observation may be likened to the characteristics of the disease when it affects a primitive people, particularly one in which tubercular infections are infrequent in their natural habitat. We may thus compare the primate tuberculosis to that of the Indians or the Esquimaux in his native land. From this line of reasoning it appears that we shall eventually find that the offspring of monkeys in captivity are less liable to succumb to the infection than those direct from the jungle; that is, of course, assuming the conditions of infection and environment to be the same.

That case after case of acute pulmonary tuberculosis can exist among these animals without the individual showing any visible illness, want of appetite, cough, or even noticeable loss of flesh, up to within a week or less of its death, one can readily appreciate the difficulty in arriving at an early diagnosis from a clinical standpoint.

FOR the two-year-old Percheron stallion Dragon, winner of first prize in his class at the recent International Live Stock Show in Chicago, John A. Spoor, president of the Union Stock Yards, is reported to have paid $5,000 during the exhibition. The price is said to be the highest on record for a draughter of like age.

PROFESSOR THOMASSEN, of the Government Veterinary School of Utrecht, one of the leading spirits of the profession of the world, died the first of the year. Dr. L. Van Es, of the North Dakota Agricultural College, has written to Holland to get full particulars of his life and death to form a comprehensive biographic article for the REVIEW.

DR. D. ARTHUR HUGHES, Veterinary Inspector to the Commissary Department, U. S. Army, Omaha, Neb., the talented REVIEW collaborator, was married on New Year's Day to Miss Henriette Almina LaJeune, at Christ's Church, Chicago. We extend our heartiest congratulations, and trust the year, so well begun, may have nothing but prosperity and happiness for the Doctor and his bride.

QUALITY IN HORSES.

By F. C. Grenside, V. S., New York City.

Paper read before the Veterinary Medical Association of New York County, Jan., 1907.

There is no subject upon which there seems to be more diversity of opinion amongst horsemen than as to what constitutes "quality" in a horse.

It is a term in very common use, but if you ask a number of horsemen what they mean by it you are sure to get a variety of answers. One will say it means breeding; another conformation; another finish; another "class;" another symmetry; another individuality; another an accentuation of all fine points; another magnetism; another refinement of lines, or perhaps a combination of some or all of these attributes. Some say that quality is recognizable but indefinable and unexplainable.

The term "quality" is an abstract one, indicating a special attribute in an individual, just as being well bred, well conformed and possessing finish are attributes of some individuals. When one says that a horse has "quality" one means that he has a special attribute which may or may not be combined with any or all of the others mentioned. Of course there are varying degrees of "quality," so that the term can only be used in a comparative sense. In the light classes of horses it is very often used synonymously with breeding. Certainly the more warm blooded a horse is the higher the degree of quality he is apt to possess; but one may take two equally well-bred thoroughbreds and find one showing evidence of the possession of a higher degree of quality than the other, so that breeding and quality do not mean the same. Neither does quality signify the possession of symmetry, good conformation, finish or "class." A horse may be defective in any or all of these respects, and still possess a high degree of "quality." He may be fiddle-headed, lop-eared, ewe-necked, sway-backed, flat-sided, slack-loined, cow-hocked and calf-kneed, and yet show much "quality."

Much confusion is caused by using the term "quality" synonymously with "class." Horses are spoken of as high class, medium class, and so on, indicating the degree of excellence which they possess for the purpose for which they are best suited. Two individuals can be taken as an example showing equal "quality," but one of them, on account of better conformation, more style and action, may be worth twice as much as the other, consequently he is a higher class individual, although the two are equal in "quality;" so that "quality" and "class" do not mean the same.

If, then, "quality" does not mean breeding, or conformation, or symmetry, or finish, or "class," or a combination of any or all of these, what does it mean? It is an easier matter to explain what constitutes "quality" than it is to give a concise and at the same time comprehensive definition of what it is. It may not inaptly be defined as fineness in contradistinction to coarseness or fineness of texture. How frequently one hears a prospective purchaser say to a dealer, "He is a very nice horse, but very light in bone." The dealer almost invariably replies, "Yes, but his bone is of good 'quality,'" and still further endeavors to make the statement more emphatic by saying that the bone is so dense, so compact, so ivory-like, that a cubic inch of it will weigh more than a cubic inch of some other horse that has indisputably more bone. It is a fact that the bone of some horses is much more dense or compact, and is, as the dealer expresses it, of better "quality" than that of some others.

What causes this greater density in the bones of some individuals than in those of others? We have to look to the elements of which bone is composed for the determining cause. The animal tissues are made up of fluids and solids. The solids are composed of three simple elements, viz.: granules, fibres and cells that are only determinable by means of the microscope. A microscope reveals differences in these elements in different individuals. This is most easily determinable with regard to the element fibres. The fibres that form part of the tissues of an individual of high "quality" are more slender, more compact

and tougher than those of one of less "quality." One can appreciate this even with the naked eye, in examining the walls of horses' hoofs. In a horse possessing a fairly high degree of "quality," the fibres which run from the coronet down, in forming the basis of the wall, are most palpably finer than in those of the wall of a coarser individual. So with the bone; the elements that combine to form it in a horse of high "quality" are finer and more highly organized than in those of a coarser individual.

What you find in regard to quality in the bones of an individual, you find pervading all the tissues of his organism. You do not find a horse with coarse bone and fine skin, or coarse skin and fine bone. If the bone is fine, or has "quality" in an individual, the muscles, tendons, ligaments, skin, hoofs, hair and all the other tissues which enter into his composition are equally fine or are of equal "quality." The "quality" of a horse's bone may be perfect, but undue or disproportionate length, or other defective form, or faulty relationship of one bone to another may make his conformation very imperfect indeed, so that it is difficult to understand why some horsemen think there is any relationship between "quality" and conformation.

A high degree of "quality" is apt to be associated with defects, or one might also state that a horse can have too much quality. Size, or more correctly, substance, is strength, other things being equal. A horse with a high degree of quality, may be so lacking in substance as to impair his power for the performance of work or severe tests of endurance or speed. He may be so light-limbed that he cannot stand the "wear and tear" of hard work and remain practically sound. We often find horses that are superfine with disproportionately small feet, and every experienced horseman knows that it is seldom that such horses do much work and remain sound. A horse, however, cannot have too much "quality," providing it is combined with sufficient substance for the purpose for which he is required. A high degree of "quality" and sufficient sub-

stance are most important attributes in contributing to perfection in horseflesh.

There are many everyday evidences of the ill consequences of deficient quality in horseflesh. You hear a horseman say that a horse has soft legs and he points out an individual inclined to fill about the skin of the fetlocks, to show windgalls which extend up to the sheaths of his back tendons, and whose hocks are inclined to be puffy throughout. If he gets a bruise or injury of any kind to the skin of his legs the consequent swelling is apt to extend and is inclined to remain. Abrasions, cuts, cracks and scratches heal rather tardily. Concussion and direct injury to bone are very much inclined to result in bony enlargement, such as splints that spread out and have not well-defined limits. Standing in the stable too much, readily produces stocking of the legs. There is a predisposition to greasy legs. Feet are inclined to be flat, large and easily bruised.

These tendencies show coarseness of tissue and low organization, a meagre blood supply and inactive nutrition. Horses with "quality" also develop windgalls and splints, if subjected to sufficient cause, but their character differs from those of the coarse horses in being clean-cut and well defined and not having the tendency to spread out. A horse with quality may have a bog-spavin, but it will show as a well-defined prominence and not as a round puffiness of the hock throughout.

Draft horsemen talk "quality" just as much or more than those who have to do with the light breeds. The difference in the "quality" of individuals of the draft breeds is just as well marked as in the light breeds. Take, for instance, a Clydesdale or Shire, either of which will have a considerable quantity of long hair on the back of his legs, which is often referred to as a "feather." If this hair is found to be fine and silky, not coarse and wiry, you will find that it is possessed by an individual that shows "quality" throughout. His skin will not be coarse and beefy, his legs will be fluted, his bone will have a tendency to flatness, showing density of structure. The hair of his mane and tail will be fine like that at the back of his legs. The emi-

nence and depressions formed by the bones of his head will be comparatively finely chiseled. He, in fact, shows "quality" when compared to other members of the same breed that are equally well bred as far as possessing the characteristics of the breed, and as far as the stud book is an indication of breeding. This is a further example of the fallacy of the view that "quality" and breeding are the same thing.

DURING the nine months ended September, 1906, 4,184,181 dozen eggs, valued at $865,437, were exported from the United States, against 2,160,339 dozen exported during the same period in 1905.

DANGERS FROM ACONITINE.—A letter from Dr. F. H. McNair, Mount Morris, N. Y., says: "I fully agree with Dr. Stringer, in the September REVIEW, as to the risk of using aconitine hypodermically. I used one of Knowles' colic tablets (morphine gr. ij, atropine gr. ¼, aconitine gr. $\frac{1}{20}$) on a horse suffering from colic, and in half an hour he was dead from aconitine poisoning, in spite of antidotal measures. Of course, he undoubtedly had a decided idiosyncrasy for the drug."

H. J. MILKS, D. V. M. (N. Y. S. V. C.), is assistant veterinarian and bacteriologist to the department of animal pathology of the Louisiana State University Agricultural Experiment Station, thus relieving the great pressure upon Dr. Dalrymple, who has borne that burden, with many collateral duties, for years. It was only the great capacity for work possessed by Dr. Dalrymple which has enabled him, not only to perform the manifold duties of his position, but also to build up a national reputation as one of the foremost sanitarians of the day.

THE Christmas examinations of the Ontario Veterinary College were held Dec. 20, when the following were graduated: Homer R. Clemmer, Staunton, Va.; Ralph Waldo Clere, Syracuse, N. Y.; David W. Cox, Chicago Junction, Ohio; Francis J. Flanagan, Boston, Mass.; Harry W. Graham, St. Catharines, Ont.; Charles E. Hershey, Erie, Pa.; Daniel James Holton, Winsted, Conn.; Joseph H. Jefferson, Albion, N. Y.; Oscar W. Leach, Hartford, Wis.; Nathaniel McCarthy, Cobourg, Ont.; Bennett Porter, Albert Lea, Minn.; B. F. Ricebarger, Gilead, Ind.; Fred H. Seward, Wallaceburg, Ont.; George S. Smiley, Rawdon, P. Q.; G. Earl Spencer, Craik, Sask.; W. Stanley Thompson, Deloraine, Man.

TUBERCULOSIS IN CHICKENS POSITIVELY IDENTIFIED IN NEW YORK.

By Samuel H. Burnett, New York State Veterinary College, Ithaca, N. Y.

Tuberculosis is described by several American writers as being very frequent in fowls, often occurring as an epizoötic; but when one examines the reports of cases he finds that there are very few in which a positive diagnosis has been made. The disease is one involving so much loss to the affected flocks and is so difficult to combat that a positive diagnosis is especially demanded. A positive diagnosis is fortunately comparatively easy in cases of this disease. The histological structure of the avian tubercle is characteristic, much more typical than that of tubercles in mammals, and the tubercles in all of the cases examined contained so many of the specific bacteria it was an easy matter to find them in specimens properly stained. The only cases in the United States where the diagnosis has been verified by finding the specific bacteria and the characteristic histological structure of the lesions seem to be those reported by Pernot in 1900 in Oregon and by Moore and Ward in 1903 in California. Recently a positive diagnosis has been made of cases occurring in New York State.

In April, 1906, a chicken's liver was received at the pathological laboratory of the N. Y. State Veterinary College for examination. As it was in alcohol the appearance was changed; but rounded whitish nodules from ¼ to ¾ mm. in diameter could be seen scattered thickly beneath the capsule and through the substance of the organ. The liver was of normal size. Microscopical examination of sections showed each of these nodules to be a typical tubercle with necrotic centre bounded by a zone of giant cells, these in turn surrounded by small round cells and connective tissue. Stained for tubercle bacteria, these tubercles showed an abundance of the *Bacterium tuberculosis*.

In June a visit was made to the flock from which the specimen came. There were thirty fowls in this flock; nine had

died during the winter and spring. Three or four were much emaciated, several were lame, with nodular swellings on the feet. In a neighboring flock in which the disease had apparently existed for a longer time the mortality had been higher. There were but eight left; 25 were said to have died during this and last year. Several fowls were killed and post-mortem examinations made. Tubercles were found in each. The liver, intestine and spleen were most commonly affected; in some tubercular swellings were also found in the feet.

The post-mortem appearances were found to differ according to the extent of the disease and the organs affected. The following is a case of generalized disease.

Fig. 1. Spleen chicken No. 5 containing large and small tubercles Natural size.

Fowl No. 5, killed for examination.

A hen in good condition with sub-peritoneal fat about 1 cm. in thickness.

Liver about 10 cm. long, greyish in color, thickly sprinkled with greyish nodules from minute to ½ cm. in diameter, the minute ones translucent.

Spleen 2 x 4 x 4 cm.; surface shows 5 large whitish rounded swellings from ½ to 1½ cm. in diameter and is thickly sprinkled with whitish nodules 1 to 2 mm. in diameter.

Fig. 2. Section of intestine, chicken, showing several tubercles. x45.

Intestines have many whitish nodules 3 to 5 mm. in diameter on the serous side and in the mesentery from the duodenum to the rectum.

Nodules were not found in the other organs. Sections of these organs showed typical tubercles. Stained with carbol fuchsin many Bact. tuberculosis were found present in the tubercles.

The tubercular nodules on the serous side of the intestine are interesting, as similar shaped nodules in the same location in cattle and sheep are due to Œsophagostoma. In cattle and sheep the nodules have however a different appearance.

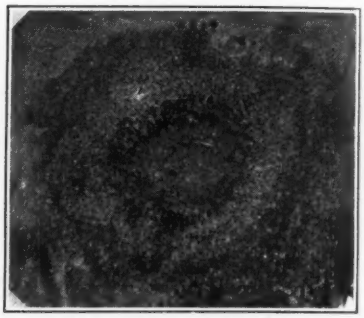


Fig. 3. Section of single tubercle, liver, chicken, showing necrotic center surrounded by zone of giant cells. x 45.

Fig. 4. *Bact. tuberculosis*, liver, chicken. x 500.

It scarcely seems probable that these cases are entirely isolated. The flock first affected is one to which many additions were made by exchange and purchase. Unfortunately it was not possible to trace the source of the infection. It would seem from the occurrence of these cases that tuberculosis is not so rare an affection in fowls as one would be forced to conclude from the hitherto reported cases.

DR. R. H. MCMULLEN, veterinarian to the Manila (P. I.) Board of Health, has an interesting article in the Buffalo (N. Y.) *Commercial* for Dec. 20 on "Cock Fighting in the Philippines." This "sport" is as popular in the Archipelago as base ball is in the States, and he estimates the average attendance at the mains at 5,000, composed chiefly of Filipinos, Chinese, and a certain stratum of Americans. As many as 60 mains are "pulled" off at one point in a day, and $10,000 often change hands. It is prohibited in the city of Manila, and the various places where it has been indulged in have been Americanized into a trust.

RIDGLING CASTRATION.

By W. G. Hassell, D. V. S., Grayville, Illinois.

Read at Annual Meeting of Illinois V. M. A., at Chicago, Dec., 4-5, 1906.

Before operating, I make a thorough examination to see that the health is good. If it is an aged patient, I diet him for several days on bran mashes and a small quantity of oats; no hay. If it is a youngster, running on pasture, I have him taken off of the pasture and placed in a box-stall for two or three days, and diet with bran mashes until he becomes gaunt.

Position for Castration.—I cast and firmly secure the patient. I consider that a great deal of the success of the operation depends upon the manner in which the patient is secured. The toe should not be drawn too high on the side, nor too far forward, but the hock should be well flexed. I then give an anodyne, consisting of one ounce of chloral hydrate.

Operation.—First wash the parts well with green soap; thoroughly disinfect with 1:1000 bichloride solution. Have instruments well sterilized and kept in an antiseptic solution. Take hold of the sheath with the left hand, and with the right make the incision parallel with and about three-quarters of an inch from the median line. If the left hand is employed wash thoroughly before using or wear an operating glove. Open incision gently. Lubricate parts with olive oil and carbolic acid. Follow the external canal, which leads to the internal abdominal ring. If the ring is entirely closed, make an opening superior and posterior to it. In a large majority of cases I find the ring closed, especially in aged horses. I seldom use more than my first finger internally. Locate the cord or the globus minor, which is posteriorly placed, and is more free than the rest. This is easily detected from any other organ by the following symptoms: (1) When touched patient will make a severe struggle of resistance. (2) By being hard and stringy. After locating cord or globus minor, I follow with the finger and bring out a loop or portion of either. By this means the testicle can be brought out of a very small opening, which I consider of great

importance in the recovery. Remove the testicle as high up as possible with the ecraseur. Thoroughly wash out with antiseptics. I always use a goodly amount of olive oil and carbolic acid.

After-treatment.—Continue the bran mashes, give daily exercise; keep the incision sufficiently open to allow of drainage. If patient is a youngster, take him off of grass and place him in a lot or box stall; feed sparingly on soft feed and some grass. The greatest danger is peritonitis. Watch patient closely; take temperature. If I find a rise in temperature, I at once give small doses of aconite and belladonna, or an ounce of nitrate of potassium in drinking water. I watch the bowels; if they become constipated, I give one quart of castor oil. By following this method and treatment my mortality is very small.

Illustrations.—(1) I operated on an aged patient, a double ridgling. I arrived two days later than agreed upon; they had worked the horse that day husking corn; he had free access to all the corn he wanted. I operated on the horse in the evening. About an hour after operation, he began to paw, pulse increased; began to look around at his sides, laid down, rolled, frequent evacuation of bowels; enteritis. I worked diligently with him all night, and saved him. Relieved him with trocar and calabar bean.

(2) Five-year-old ridgling; well fed, no exercise. Had been tried by others, who failed. I finally made my way through abdominal muscles, which had become gristled, and removed testicle. This horse was down twenty minutes. Shortly after he got up he began to paw; then followed regurgitation of contents of stomach through nostrils; showed symptoms of acute indigestion of stomach; in five hours he was dead.

(3) Six-year-old patient, prepared for the operation. I removed from him a testicle that was as large and well developed as if it had been in the scrotum. Compelled to make a large opening. He suffered no bad effects except being a little stiff and a little soreness. In about eight or ten days he was at his usual work.

(4) Black five-year-old ridgling, brought to my barn Sept. 30th; operated Oct. 5th. He had been tried upon both sides. I first made an incision on left side and well up in external canal; located end of spermatic cord; rolled him over and made an opening on the right side and found that the tissues had become quite indurated. I made my way through them, and succeeded in finding a large testicle in the abdominal cavity. First day, patient appeared as though nothing had happened to him; second day slightly swollen and refused to eat; temperature rose two degrees. Gave him three doses, six hours apart, of aconite and belladonna. He recovered very fast; third day, temperature normal, ate well, and in nine days ready to go home.

I give these illustrations to show what benefits I derive in preparing my patients for the operation.

NEW CURATE: "I say, madam, that wretched little dog of yours has bitten a piece clean out of my leg." The Lady (anxiously): "Dear, dear! How annoying, when Tony's been ill, and the dear veterinary surgeon said he wasn't to touch meat for at least two weeks."—*(The Sketch.)*

EVIDENTLY the office of State Veterinarian is not always a pleasant one. Dr. C. A. McKim, who holds that position in Nebraska, had to face a shotgun recently when he ordered a number of glandered horses destroyed. But the horses were killed, and the veterinarian still lives.

THE IOWA-NEBRASKA VETERINARY ASSOCIATION, through a resolution, proposes to merge with the Missouri Valley Veterinary Association, providing the latter will receive its members in good standing without membership fee, and providing also that it will agree to assume control and responsibility for the *Bulletin* published by the Iowa-Nebraska Association.

A NEW BULLETIN on "Nodule Disease of the Intestines of Sheep," by Dr. W. H. Dalrymple, of the Louisiana Experiment Station, is just off the press. His former work along this line has been greatly appreciated by the flockmen of the country. Joseph E. Wing, in his "Sheep Farming in America," says they are the most useful series of experiments ever made in attempting to rid sheep of parasites. Dalrymple's bulletins have been reproduced in and commended by all the papers devoted to the industry in the country.

AGALACTIA IN THE MARE AT PARTURITION.

By H. C. Singer, M. D. C, Cowden, Ill.

Presented to the Meeting of the Illinois State V. M. A., at Chicago, Dec. 4, 1906.

This condition is an absence of milk in the mammæ at the time of giving birth to the young, especially found in mares which have not been bred for a long time or have foaled their first young, though themselves aged. This absence of secretion may occur even when pregnancy has been normal and has reached its full limit.

Etiology.—Gastric or intestinal affections, fatiguing work before time of parturition, mastitis, incomplete development or fatty degeneration of the mammæ, or atrophy of same, exhaustion following disease, severe labor at the time of parturition, insufficient food either before or immediately after parturition, natural debility, emaciation, etc.

Symptoms.—The udder is small and soft; attempts at milking only result in the production of some drops of yellowish serum, followed sometimes by a few drops of white, watery fluid. In some instances the milk gradually appears sometime after parturition, and a moderate quantity is secreted, but in the majority of cases the milk is not produced at all, or in very small quantities.

This condition is very unfortunate for the progeny, which will suffer from hunger if not observed, and must either be artificially cared for, or be put to another animal to be suckled.

Treatment.—The treatment of this condition I find usually proves unsuccessful. It must chiefly consist in giving good food, particularly of a leguminous kind, and other agents which are likely to stimulate the secretory function of the mammæ. Locally applied alcohol or castor oil with friction. The teats should be frequently stripped and the mammæ well rubbed. Internally, jaborandi, oleum recini, alcohol and general tonics.

Those physicians in London who are willing to be called at night have red lanterns attached to their houses.

REPORTS OF CASES.

"Careful observation makes a skillful practitioner, but his skill dies with him. By recording his observations, he adds to the knowledge of his profession, and assists by his facts in building up the solid edifice of pathological science."

PARTIAL DISLOCATION OF THE CERVICAL VERTEBRÆ.*

By W. J. MARTIN, V. S., Kankakee, Ill.

On the morning of April 8, 1905, I received a telephone message from an adjoining town, requesting me to visit a mare that had injured herself during the night previous. Upon arriving at the farm I found a beautiful mare of the Percheron breed, aged four years, and gleaned from the owner the following history of the case: The mare was due to foal, as the owner supposed, about the middle of April, and with this understanding the mare had been placed the night previous in an ordinary stall, and when the owner appeared upon the scene the next morning, he found the mare securely cast in the stall with her newly born foal behind her. Upon releasing her from her predicament, the animal was so entirely exhausted as to be unable to arise. After being allowed to rest for an hour or so, she was after much exertion raised to her feet, when it was discovered that there was something radically wrong with her neck. The head hanging down so that the nose nearly rested on the ground and sharply inclined to the right, the poor beast presented a pitiable sight. Her head was battered up, with both eyes swelled almost shut, subluxation of the cervical vertebræ between the 5th and the 6th bones, together with fracture of external angle of each ileum.

When the head was raised up to its normal height, and firm extension and pressure was exerted on the neck, the subluxation could be reduced, the bones slipping into place with a decided crepitating sound; but when the pressure was removed, and the animal made the slightest movement, displacement would again occur and the animal's head would drop down and incline to the right side of the body. There was no marked loss of coördination in the posterior part of the body due to the pressure upon the spinal cord at the seat of luxation. The

* Read at the Semi-Annual Meeting of the Illinois State Veterinary Medical Association, July 12, 1906.

animal's appetite was in nowise impaired. She ate hay and grain and drank water as usual.

In all my years of practice, I have never met with a similar case, and to say that I was at a loss how to proceed, as to the best methods of treatment if any should be adopted, is but putting it mildly. I did not think that there was any use of doing anything further than to advise the animal's destruction, but to this procedure I felt a decided repugnance.

After watching the animal's actions for an hour or two, and conversing with the owner and learning from him that he was very anxious to try and save the mare regardless of expense, I decided to place the animal in the slings and apply splints and bandages to the neck, in the faint hope of retaining the cervical bones in position long enough to secure permanent fixation.

The best material for splints at hand was found to be light barrel staves. These were soaked in hot water and properly shaped to the neck, and extended along its entire length. The mare was then placed in the sling, and a light, strong halter was placed on the head, two strong straps were attached to each side of the halter rings and passed through two rings fastened in front of the mare, so as to elevate the head as near the natural position as possible, and there tied. The dislocated vertebræ were then brought into position by careful extension of the head and neck, together with lateral pressure over the seat of the injury. Thick layers of cotton-wool were laid along the right side of the neck, with thinner layers on the left side and the splints applied. A roller bandage six inches in width, made from light woolen bed blankets, held all in place.

After the mare's neck had been dressed she appeared to be quite comfortable. She ate hay from a small rack that had been placed on a level with her head.

The successful issue of the operation depended entirely on the question whether the animal's vitality would be sufficient to sustain her in the standing position in the sling with her head tied up long enough to permit nature to retain the cervical bones in their natural position. Although there was but little tumefaction around the seat of injury, and no extravasation of blood into the surrounding tissues, I must confess that I was very skeptical on this point. However, having done everything possible for my patient, I informed the owner to keep her up on her feet in the sling as long as he possibly could, but that if she became tired out, and commenced to lie down in the sling and thus throw an extra amount of weight on the head in its ele-

vated position, to let her down on the floor with the sling under her.

She remained standing for about 24 hours, when she became very restless and threw her whole weight on the sling, and they were forced to lower her to the ground. During this restless spell, the neck dressing became slightly displaced, though not enough to permit displacement of the bones. After resting on the floor for a few hours, she was again raised by the sling to a standing position and the head tied up as before. This method was continued for three days, when the animal becoming exceedingly restless, the bandages and splints were entirely displaced. After this unfortunate event, I naturally expected to find that all our efforts would be rendered futile and that the dislocation would be just as complete as in the beginning.

You can well imagine my surprise when the owner said, "Doctor, her neck is straight and all right." And such indeed was the case. The dislocation had been entirely reduced. But as a precautionary measure a light splint and bandage was again applied to the neck and kept on for a few days longer, with the head tied up when the mare was standing up in the sling. She was kept in the sling for about three weeks altogether.

As a complication parturient laminitis set in and the mare walked with great difficulty when taken out of the sling. At the end of a couple of months, when the animal's strength had returned, the wounds of the ileum, which had been suppurating more or less all the time, were opened, and the broken fragments of the bone removed from both angles.

At this writing my patient has entirely recovered her old-time rotund form that she had before she met with such a distressing accident. She weighs about 1500 pounds, works every day on the farm, and has again taken her place in the ranks of the farm matrons. Not a sign of the dislocation is to be seen.

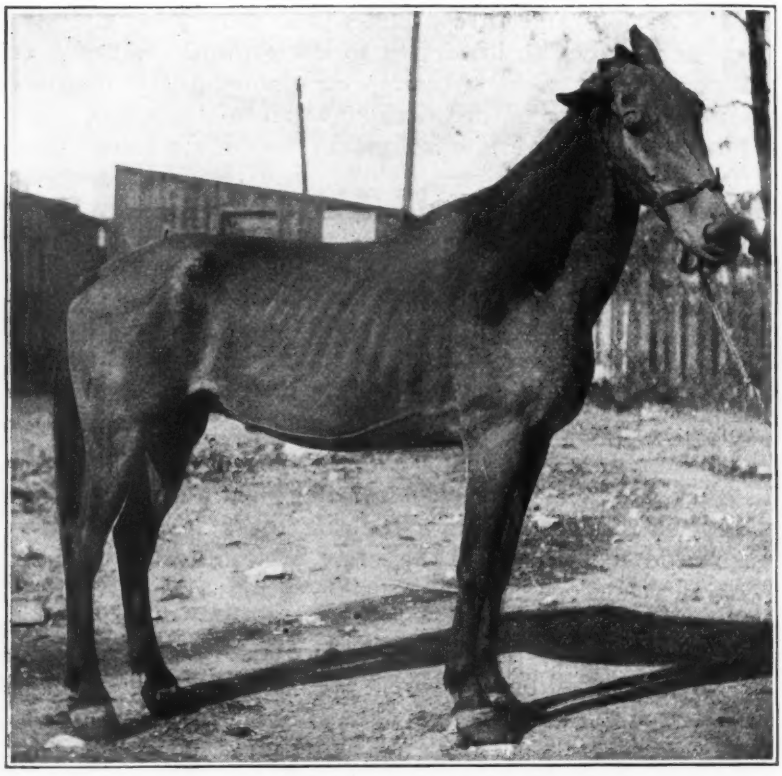
MASTOIDITIS IN A HORSE.

By A. T. KINSLEY, M. Sc., D. V. S., Kansas City, Mo.

The subject, a dun gelding, about 12 years old, the property of a horse trader, was presented at the Kansas City Veterinary College clinic for treatment, October 27, 1906.

The following incomplete history was obtained: The horse was in good health until about the first of September, when an injury received in the stall resulted in an abscess at the base

of the right ear. The abscess was treated for some time by a local veterinarian.



Symptoms.—The head was turned to the right; the right ear drooped (see cut); a slight ill-smelling discharge came from the right external auditory meatus; the right eye was protruded; the lips and expression muscles on the right side were paralyzed; there was also a partial lingual paralysis; the gait was unsteady; appetite was good, but prehension was interfered with materially because of the paralysis; temperature, respiration and circulation were normal.

Diagnosis.—After two or three days' observation, it was concluded that the horse was afflicted with mastoiditis, with possible extension and involvement of the internal ear. The diagnosis was based upon the following anatomical relations: The lips and muscles of expression are enervated by the facial nerve. Inflammatory processes of the mastoid cells tend to

cause a bulging of the cells which are adjacent to the aqueduct of Fallopius and this may produce sufficient pressure upon the facial nerve to result in its paralysis. A long continued inflammation of the middle ear and mastoid cells may result in a disarticulation of the petrosal bone. The disarticulated bone may cause pressure upon the adjacent contents of the cranial cavity and hence upon the origin of the trifacial and glosso-pharyngeal nerves, and this may result in partial paralysis of the regions enervated by these nerves—that is, the inferior lip, tongue, etc. Pressure may also be exerted upon the origin of the motores oculorum, patheticus and abducens nerves and produce motor paralysis of the intrinsic ocular muscles and thus allow the eye to protrude. The unsteady gait may be produced either by pressure upon the cerebellum or, possible, a disturbance in the semicircular canals.

Because of the age of the animal and the length of time the disease had been present, the outcome was considered unfavorable and the horse was destroyed.

A careful examination of the parts was made and a necrotic condition was found in the middle ear extending into the mastoid cells and out through the auditory meatus. The entire contents, the ossicles, ligaments, muscles and mucous membranes of the middle ear had been destroyed, the petrous bone was involved in its entirety, the mastoid cells being enlarged and the bone was disarticulated; the contents of the internal ear were also slightly involved.

This was an interesting case. I have not found any veterinary literature upon this disease.

A STALLION WITHOUT A SHEATH.

By S. E. Hershey, V. S., Charleston, W. Va.

History:—The owner came to my infirmary in January, 1906, stating he had a horse, five years old, that had jumped over a stump when a colt with its mother, and tore its sheath from the abdomen, and the penis swung pendulous between its hind legs. The owner wanted to know if any operation could be performed so as to suspend the penis in a natural position. I told him I thought not, and the only thing to do would be to amputate the penis to make him a useful horse, but told him to bring the horse to the infirmary (he lived 18 miles away), and then I could advise better after seeing him. He said he would, but did not until April 21. When he rode the horse through town it attracted more attention than Barnum & Bailey's cir-

cus. He was five years old, 15 hands high, weighing 850 pounds, and apparently well bred.

The present owner had only owned him six months, and the horse had been traded and owned by about 50 different people in six or seven adjoining counties.

After making an examination, I found no scars whatever to show that he had met with an accident, and also found he had never been castrated. The testicles were both up in the inguinal canal, the left the larger, lying just outside the external abdominal ring, about as large as a walnut, and very soft. The right one was about as large as a hulled walnut, no glandular tissue, lying in the inguinal canal.

BEFORE OPERATION.

AFTER OPERATION.

I then advised the owner that the better course to pursue was to castrate, and then after recovery (30 to 60 days) amputate the penis, to which he finally consented. I castrated and sent the horse home in five days. He made a nice recovery and was brought back to the infirmary Aug. 14. I amputated 10 inches of the penis, under anæsthesia, Aug. 16, from which he recovered, and in two weeks was sent home, and has been used for riding and driving ever since. He at no time after the operation had over 102.4° of fever.

Would this be termed, before operation, an hermaphrodite? The mammary glands were partly developed, and what would it be termed now?

PECULIAR FATAL CASES AND POST-MORTEMS.*

By LOUIS JULIAND, D. V. M., Greene, N. Y.

There seems to be a rather strong aversion on the part of most veterinarians to acknowledging that they do lose cases occasionally that they have treated.

During one of the last lectures delivered by Prof. V. A. Moore while I was in college, he said "Never miss the chance to make a post-mortem." Then he went on and said that there would never be two which would be just alike and you will always learn something.

Many interesting cases are reported which are fatal, but without records of any post-mortems, which in many cases would explain everything, prove the diagnosis and satisfy the owner, the last being the most important, as the future reputation of the practitioner may be based almost entirely on the results of his post-mortems.

The most common fatal cases are cases of colic in its various forms.

Case I.—The first case was that of a roan gelding kept for light driving, well taken care of and seldom driven more than a couple of hours in a day.

One morning when the owner awoke he heard this horse making considerable noise, and on going to the barn found him very uneasy, rolling and tumbling around. He called the first man he could get and he gave the horse "Daniel's Colic Medicine" until he became quiet; then he left town. It was only shortly after this that I first saw the case. I gave an aloes physic ball and then cannabis indica to keep him quiet, but without success. He died about 2 A. M. that night. Post-mortem:—The horse was opened along the posterior border of the last rib to the median line, then direct to the pelvis, and this turned back, exposing the bowels, when two loops were seen to be dark colored. Tracing these up I came to a knot where they were corded. The knot was formed by two small tumors hanging about four and eight inches respectively from attachment by fine cord. They were tied together around the bowel so tightly that one had to be broken loose to untie the knot.

In every case, where I have given cannabis indica to quiet a horse, it has acted as an excitant if it was fatal, otherwise I would get the result desired. Why is it?

* Read by title at Meeting New York State V. M. Society at Buffalo, N. Y., Sept. 11-13, 1906.

Case II.—A team drawing logs on bobs was stopped to rest. When started the footing gave way under one horse and he fell down. He got up and drew his end to the mill with the other horse. Here he showed signs of colic, was put out, and about four hours later I treated him by giving pill and medicine to quiet him. He physiced out next day and was led home, about six miles, where I saw him at night. He died the next day. Post-mortem:—He ruptured the diaphragm and some of the small bowels passed into the chest cavity.

Case III.—Horse sick all night and nothing done for it. When I saw him he was past help, apparently with acute inflammation of the bowels. Died about midnight. Post-mortem:—No indications of congestion or inflammation. The cæcum was only about two feet long and contents quite dry. Nothing else wrong about the horse that I could find.

Case IV.—Called about midnight for a case of colic. After half an hour I told the man his horse was going to die. He would not have him killed, so I left medicine for him and went home. In the morning about ten, he came to my office and wanted more medicine, which I gave him. He went home and found the horse all in, so gave no medicine. I went down that afternoon to make a post-mortem, as I had told him I would. Post-mortem:—Everything apparently all right, except there were small calcareous deposits all through the intestines and on the lungs and heart. Apparently nothing to cause death.

Case V.—Called to see a horse that had not been doing well. Apparently a case of distemper. Owner said he had a little cold. Next day a little better at noon. At 3 P. M. horse was down and physicing badly. Died before 5 P. M. Post-mortem:—Found four tumors, nearly round, estimated to weigh about 100 pounds. There were also quite a number of smaller ones. This horse had been off occasionally for over two years.

These are only a few of many interesting cases, some of which are equally or perhaps more interesting than these that are described here.

In no case could the condition be told and cause of death known without the post-mortem examination.

Personally I feel much better satisfied to think that I have made these post-mortems and I know that the various owners certainly are better satisfied as a result of them.

CYSTIC ADENO-CARCINOMA.

By C. J. MARSHALL, V. M. D., Philadelphia, Pa.

The subject was a bay mare, 16 years old, used in a private coach stable for the past eight years. Was never bred and had been an unusually serviceable animal.

Last May she was turned out for the summer. Soon after this it was observed that she was getting large around the abdomen. This condition, at first, was attributed to the grass diet. It was then thought that she might be in foal. She increased in size till the time she was brought to the stable for winter. The udder increased in size and the abdomen was as large as in a normal pregnancy a month before parturition. Considerable œdema developed under the abdomen.

October 15th she showed colicky pains. Appetite was bad, temperature 102.5, pulse 72, peristalsis normal, and defecation and micturition were normal.

Diagnosis was not made, and no treatment prescribed, except cannabis indica in case the pain increased.

The next day the above symptoms were magnified. Pulse was 90. An attempt was made to palpate the rectum, but it was impossible to get the hand in the rectum farther than the wrist. A tumor was suspected and the owner advised to have the mare destroyed to prevent more suffering. This was done Oct. 18th.

On post-mortem the spleen was found about twice the normal size, a large quantity of serum in the abdominal cavity, and a tumor of the left ovary that weighed 37 lbs. It was spherical and very firm.

The tumor was sent to the pathologist of the University of Pennsylvania, who diagnosed it as a cystic adeno-carcinoma.

ENORMOUS CHAMPIGNON IN A HOG.

By S. E. HERSHEY, V. S., Charleston, W. Va.

On August 15 I received a telephone call from Mr. B., about two miles from town, to see a hog, 15 months old, weighing 140 lbs., that had a big knot or tumor growing where testicles should be, and determine if anything could be done to help it. The owner stated he had opened it once or twice in the past two months, and a little pus escaped, but it had gotten very hard at this time. I called to see this hog and found a champignon on the left cord as large as a man's head, and nearly touching the ground. My prognosis was unfavorable; but, as the hog was

not worth a dollar in this condition, the owner asked me to operate. I amputated the champignon with but little hæmorrhage, and it was quite a successful operation. But my patient died 10 minutes later from shock. The champignon weighed 8½ lbs. This hog was castrated when three months old, and the champignon grew from that time on.

NATURE HEALS A FRACTURED ULNA.

By F. H. McNAIR, D. V. M., Mount Morris, N. Y.

Patient a draught horse, 26 years old, but in excellent condition. Was kicked so as to fracture the upper third of ulna, allowing free movement of olecranon. Owner was advised to destroy horse, but for sentimental reasons did not wish to do so without a trial at saving his life. As animal was in a pasture lot he could not be put in slings, so nature was allowed free play. Now after three months horse hobbles around fairly well, though the leg is thickened at point of fracture and is somewhat shortened.

A FOAL WITH SAND IN STOMACH.

By F. H. McNAIR, D. V. M., Mount Morris, N. Y.

A sucking colt, 10 weeks old, just recovering from strangles. When seen it had been refusing for several days to suck much. Temperature 105°, great lassitude and weakness shown. Diagnosed as internal abscesses from strangles, and gave doubtful prognosis. Prescribed course of tonics. Colt died the next day. Post-mortem examination revealed a double handful of clear sand in lower fundus of stomach. Had heard of colts eating other foreign substances, but had never before heard of a sand diet.

"SPECK" is the appropriate name of the "smallest horse in the world," owned by Edward Wigand, of Delaware, Ohio. The diminutive animal is 6.2 hands high and weighs sixty-two pounds. He is six years old.

"BY abusing the privileges of the highways in Europe automobilists are sowing the wind there the same as in the United States. In Belgium the other day a petition was presented to the Parliament asking that every motor car in the country be condemned and burned in one great bonfire, the resultant scrap iron to be sold for the benefit of those who have been maimed by the modern juggernauts."—(*New York Herald, Dec. 30.*)

SURGICAL ITEMS.

By Drs. Louis A. and Edward Merillat, Chicago, Ill.

CHRONIC GONITIS OF THE HORSE.

Chronic, painful inflammations of the stifles of horses are quite frequently encountered among the hard-worked classes. The disease is easily recognized as a special entity, and is easily differentiated from traumatic arthritis by the systemic symptoms that always accompany it, and by the characteristic physiognomy of the stifles it always produces. It is seen only in mature horses, between the ages of six and fifteen years. Its earliest manifestations are a state of unthriftiness, tucking of the flanks, variable appetite, fatigue, and an inclination to lie down soon after entering the stable, often before having finished the feed. The first local symptom is pathognomonic, if the above general signs are also in evidence. It is the tendency to hold the foot from the floor for a few moments, at frequent intervals, while at rest in the stall. As the disease becomes bilateral, first one then the other foot is thus lifted. The foot is lifted about six inches from the floor in a forward direction and the stifle is pressed into the abdomen (Fig. 1). Palpation of the stifle reveals a limited sensitiveness and a marked bulging of

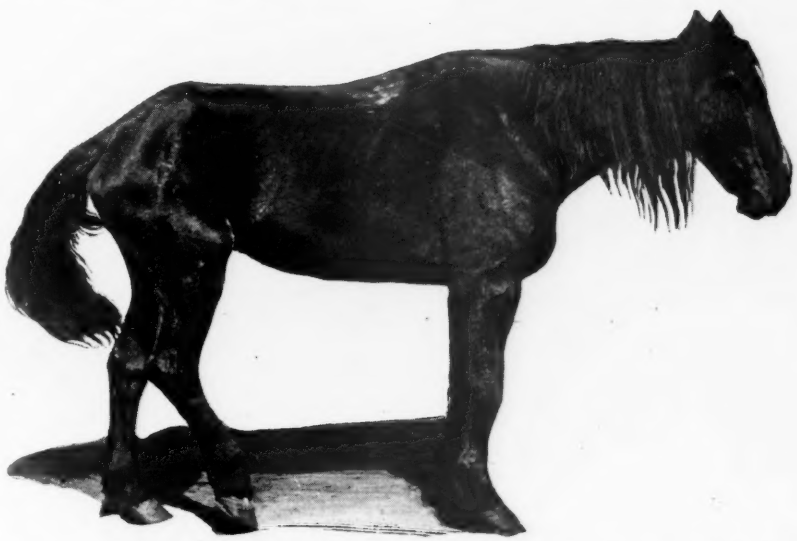


Fig. 1.—A case of osteoporosis. The horse is in the act of lifting the foot from the floor. The stifle is bulged. The right ramus of the inferior maxilla is enlarged.

the capsular ligament internally. Later the femero-tibial angle becomes more and more obtuse, until these two bones form almost a straight line from the hip to the hock. The crural muscles atrophy, and the fascia lata becomes stretched so as to stand out prominently like a large tendon. The general symptoms accentuate gradually, the patient emaciates, the appetite fails, the flanks tuck more and more, rising from the night's recumbency becomes difficult and even impossible without assistance, and finally some complication ends the sufferer's existence.

This clinical picture is well known to city practitioners, who call the disease gonitis and pronounce it incurable. A rheumatic origin is often suspected. Doubtless it is as good a "rheumatism" as we could possibly find in domestic animals. Its mysterious location at the beginning, its migration from one leg to the other during the first phases, its chronic course, its general symptoms, and finally the articular deformity it produces, are a chain of conditions that justify the use of the mysterious word "rheumatism." Without such a convenient word embarrassing explanations would be required.

FIG. 2.—A case of osteoporosis. The stifle is markedly tumefied. The femoro-tibial angle is straightened. The tensor fascia lata is stretched

A more serious study of the disease, however, stamps it as one of the manifestations of equine osteoporosis. In innumerable cases it coexists with the maxillary manifestation of that disease (big-head), Fig. 1, which fact, together with the post-mortem appearances of the whole skeleton, lucidly classifies it with this general skeletal disease, whose origin still remains in doubt. Gonitis is therefore but one of the many local manifestations of a general rarefying osteitis—a decalcification or demineraliza-

tion of the bones. It is analogous to osseous cachexia of the dairy cow. It is a disease of domestication, a stable disease, a work-horse disease, that is unknown in animals leading a healthful out-of-door life. The herbivora seem to be able to assimilate enough calcium, from the trivial amount of this element found in vegetables, to construct their bones, but they do not seem to be always able to assimilate enough to effectually reconstruct them when broken, nor to prevent them from demineralizing under certain conditions. The great amounts of bran, poor mill-feed, middlings, etc., which contain no calcium and the general dearth of this bone constructing element in all of the feeds of the horse, is very evidently the real cause of this mysterious disease. Proof of such an assertion must, however, remain wanting, on account of the impossibility of experimentally producing the disease in the absence of the subtle susceptibility or subtle derangement of nutrition, necessary to the successful ac-

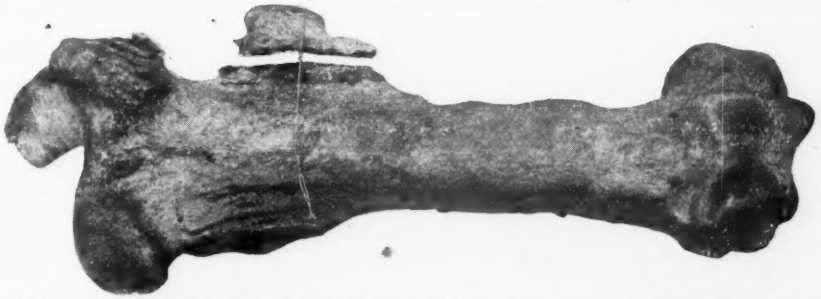


FIG. 3.—One femur of a case of gonitis bilateralis showing fracture of the trochanter minor externus and the rarefied condition of the bone tissue at its base. The fracture was produced in the fall when killed. The bone is rough, porous and was easily stripped of its periosteum.

tion of the exciting cause. Nevertheless, the frequency with which *gonitis* appears as a visible manifestation of marked cases of *osteoporosis* makes the theory of their common origin quite feasible, and Fig. 3 confirms the theory in one case at least.

* * *

AN OBSERVATION ON THE INFLUENCE OF ALTITUDE ON HÆMORRHAGE.

While performing a number of rather crude sanguinary operations on horses in an altitude from 5,500 to 7,000 feet, it was noticed that the surgical wounds bled more profusely, that the loss of blood produced more shock, and that its flow was much more difficult to control than in lower altitudes. The ordinary blood loss that always accompanies radical operations on the withers and poll for chronic fistulæ, produced in every case an alarming state of shock, manifested by gasping, tremors, per-

spiration, disturbed circulation and accelerated respirations. The exertion against the restraining harnesses alone provoked a transient exhaustion, precisely the same as exertion does to human beings unaccustomed to these altitudes, but in the non-sanguinary operations, such as neurotomies, there was no shock. The exertion of restraint plus the loss of blood was manifestly disastrous. In every case reaction was slow, although there were no fatalities from this cause. The horses referred to worked in these high altitudes during four summer months. During the remaining eight months they pastured on ranges much lower.

* * *

A DOSE OF ANTITETANIC SERUM FAILS TO PREVENT TETANUS.

That a single dose of antitetanic serum may sometimes fail to prevent tetanus is shown by the following report:—A sixteen-hundred pound draft horse partly pulled a hind shoe and then stepped back on one of the outside nails, which penetrated deeply and caused considerable pain. The foot was well pared by a horse shoer and given the usual stable care by the attendants. On the fourth day, the pain having accentuated, the horse was taken to the hospital, where it was immediately given radical surgical treatment and a 10 c.c. dose of Pasteur's antitetanic serum. The pain gradually diminished during the succeeding five days. In fact, on the ninth day little lameness remained, but symptoms of tetanus followed in its wake and continued to accentuate until a pronounced case of subacute tetanus developed. The period of incubation was nine days, the first symptoms appearing five days after the administration of the preventive inoculation. The symptoms were probably attenuated somewhat, as recovery occurred after only three weeks.

This case is only an illustration of the well-established fact that a single dose of antitetanic serum is not always sufficient to assure an absolutely perfect immunity, but it may serve as a reminder not to place too much dependence upon a single dose when much depends upon the results.

* * *

CONGENITAL ATRESIA OF STENO'S DUCT.

A nine-hundred pound saddle horse, three years old, shortly after having fallen into a new owner's hands was presented for the treatment of a "tumor" on the lower jaw. It was known

to have existed for a year without materially changing in size or form. An earlier history was not obtainable.

On examination the enlargement proved to be a cyst, fluctuant, non-painful, perfectly spherical and the size of a base ball. There were scars on its surface indicating previous incisions, and it was learned that a veterinarian had once explored it with an aspirating canula and evacuated its contents, which was recognized as saliva. The cyst refilled in about two weeks.

On firm pressure about one-third of the contents could be forced into the duct proximally, but none could be forced into the duct distally, which circumstance led to the impression that the duct was occluded by some mysterious obstruction between the cyst and the buccal cavity. But the obstruction could not be located nor could any part of the duct be felt between the cyst and the mouth. The tumefaction of the parotid gland that always accompanies acquired obstructions of Steno's duct was wanting and there was no evidence that the gland was ever implicated. The parotid region was apparently normal, but after a correct diagnosis was made a closer examination proved it to be atrophied. The gland was not developed.

A lack of previous experience with a similar condition made this case a veritable enigma. The salivary contents, the connection of the cyst with the duct proximally, the total occlusion distally and the absence of any evidence of present or past abnormalities of the gland, proved a combination of conditions that were difficult to connect with any acquired defect of Steno's duct. A congenital defect was not suspected.

Operation.—The patient was cast with the harness, the region clipped, washed and disinfected, and the cyst carefully dissected out without evacuating its contents. Its close relations to the glosso-facial artery and vein, as well as the fruitless search for the distal end of the duct (which was found wanting) required exceptionally careful dissection. When the dissection had been carried entirely around the cyst, it was found to be a spherical blind termination of the duct. There was no distal outlet nor any evidence that any such outlet ever existed. It was now clearly recognized as a congenital atresia. The gland was palpated and found practically absent. The puzzle was solved. The proximal end of the duct, which was as large as a man's finger, was dissected free from the glosso-facial artery and vein as far as the angle of the jaw and then ligated with a braided-silk thread. The surgical wound was sutured with a continuous stitch. (The result is a matter for future observation.)

EXTRACTS FROM EXCHANGES.

GERMAN REVIEW.

By J. P. O'Leary, V. M. D., Bureau of Animal Industry, Buffalo, N. Y.

The Present Standpoint on the Question of Purpura Hæmorrhagica.—The reports of Dr. Barthel present a complete compilation of references covering the following points: (1) concerning the cause and origin of purpura hæmorrhagica; (2) its relation to the infectious diseases; (3) the modern methods of treatment and results. Morbus maculosus, or purpura hæmorrhagica, for which quite a series of other names were used and some of which are at present in use, represents an infectious or an intoxication disease. It is characterized by the appearance of numerous extensive sanguineo-serous effusions, especially on the head, chest, abdomen and limbs, also by hæmorrhages in the skin and subcutaneous connective tissues, in the mucous membranes, particularly the respiratory organs, in the nasal cavity, and in other visceral organs, which result in gangrene of these parts. According to Friedberger and Fröhner, and still more recently Javorisky, the disease may represent a primary malady. However, according to the customary acceptation of the etiology of morbus maculosus, it develops as a secondary affection to different kinds of acute and chronic diseases, particularly preceded by infectious diseases. At the present moment, there are two theories concerning it—one is, that it is infectious, the other, that it is simply an intoxication disease. Friedberger and Fröhner are the principal supporters of the former theory, for which they assume schizomycetic infection as a factor, basing their opinion upon the frequent enzoötic outbreaks and the presence of several attacks in one and the same case; further, also, the similarity of the disease with malignant œdema and the presence of the *Bacillus hæmorrhagicus* in morbus maculosus, Werlhofü, or the purpura hæmorrhagica of man. The author considers the latter disease only in so far as it relates to the purpuric diseases of the horse. Contrary to this alleged acceptation, that purpura is an infectious disease, Dieckerhoff maintains, upon the ground of his clinical observations, that it is an intoxication disease and certainly an autointoxication of the body through primary foci with a specific virus. That toxines have formed at these particular points

through the influence of microörganisms and cause alterations in the walls of the bloodvessels, which account for the hæmorrhagic lesions. The presupposition of a chemical poison circulating in the blood, the frequent non-febrile course of the disease, the very sudden and simultaneous appearance of swellings in various parts of the body, supported by the fact that the disease, as numerous experiments have substantiated, is neither infectious nor can it be transmitted to other horses or animals, and that up to the present time the schizomycetes have not been determined with certainty. We know very little of the nature and derivation of this infectious matter, whether the source of infection takes place through the inhalation of the foul air in stables or by means of food or other intermediaries. A disease identical with purpura hæmorrhagica of the horse, according to numerous reports, seems to have appeared also in cattle and buffalo, likewise in goats. Whether the hæmorrhagic diseases observed by Lellman in dogs are to be considered as morbus maculosus cannot be affirmed definitely. In swine, quite frequently, we find multiple hæmorrhages in the muscles which cannot be associated with purpura. According to Ostertag, these are due to rupture of the muscle fibrillæ during transportation. Regarding the relation of morbus maculosus to the infectious diseases, the author presents the following: that purpura hæmorrhagica is neither identical with abdominal and spotted, typhoid, nor with scarlet fever or the disease of the same name in man. Theiler admits on the ground of his experience in South Africa, that purpura hæmorrhagica has some casual association with influenza. Similar circumstances are reported by Lignières, that according to his bacteriological examinations, he frequently found the *Bacillus equisepticus*, and his experience in the Argentine Republic, where influenza prevails mostly in an acute form, without an inflammation of the thoracic organs, later he observed very frequently morbus maculosus as a secondary disorder, which shows that a very close connection exists between the two diseases. Bernabei and Boatini presume that on account of having seen Italian horses affected simultaneously with purpura hæmorrhagica and anthrax there must be some association. Maier, Becker and Thomas are firmly convinced upon the ground of many years of experience in remount depots, that strangles and morbus maculosus stand in casual relation. The latter, staff veterinarian at the remount depot at Skarsa, has established the fact by statistical records, that except during the period of the prevalence of

strangles, purpura hæmorrhagica never appears, and that the number of cases were more numerous, the more irregular, severe and frequent strangles appeared. Still proof for all these assertions must be brought into a more scientific form. In the third part, modern methods of treatment were discussed. The speaker referred in statistical form to the numerous recent publications concerning the treatment with Lugol's solution, iodovasogen, actol, protargol, bollargol, ichthargan, also the serum therapy. Finally, he made a detailed report concerning the successful treatment of the cases of morbus maculosus at present in the clinic at the Veterinary High School, Dresden. It was interesting to note the accurate records of the temperatures following the collargol injections. As a result of the completion of his work, the author sums up the following conclusions: (1) The most appropriate designation for the malady just described is, doubtless, the Latin term "morbus maculosus," or the German name, "blutflecken-krankheit." All other names should be sedulously avoided, as they do not throw any light on the character of the disease and therefore cause confusion. Nothing is known concerning the cause and origin of purpura hæmorrhagica. However, it is accepted in all probability that it is not a primary affection, but rather a secondary disease and not infectious, but, on the contrary, an autointoxication. (2) Its relation to the infectious diseases necessitates further elucidation and scientific verification. (3) It is difficult to find a safe guide for the application of the remedies recommended for use from the labyrinth of medications and agents employed in the treatment of this disease; for the experiences brought forward, particularly in later years, regarding the use of the iodine and silver therapy, likewise the serum treatment, have not fully justified expectations. Yet the reports concerning their value purport mostly to contradiction, that unfortunately no hitherto known remedy can be ascribed without prejudice, which acts as a specific in the treatment of morbus maculosus, but rather tend to show that all those treatments have scarcely influenced the mortality figures, which average 50 per cent., and that the various cases met with in practice, which in spite of the severity of the attack, the patients recover without any therapeutic interference. It is presumed that in the recovery of animals affected with morbus maculosus, that it is not this or that remedy that plays a part, but the *vis medicatrix naturæ*. In any case, the treatment of morbus maculosus up to the present moment, represents a complete dark field, and necessitates further research.

In the discussion of this subject Mr. Pelz mentioned a few cases of morbus maculosus successfully treated with Tallianine, 10 per cent. iodovasogen and ichthyol. Prof. Joest hopes for a solution of the whole question, when the etiology of the disease is cleared up. The question arises, as to whether we are dealing with an intoxication or an infectious disease at this time, and this can be determined only experimentally, as all the body juices and secretions of horses must be examined. If we have to deal with an intoxication, then the serum treatment is of no avail. J. Richter was not able to prove by facts the efficacy of the use of Tallianine; the other remedies are also very expensive. Collargol, however, in his opinion, has a favorable influence on the disease, as was explained in one case. The patient must be placed under the continuous influence of the silver treatment. Thrombi are of frequent occurrence after the use of ichthargan. Collargol is at present the best remedy, although fever is a sequel to injections of the new collargol preparations. However, this is disputed by Credé in the case of human practice. Zschockes maintains that the frequent appearance of the disease in remount depots suggests an infection element as a factor, but this is an illusion. It frequently follows infectious diseases, as strangles, and upon this account we are led to believe that petechial fever is a secondary disease. Mr. Pelz believes that collargol has an unexplained specific action upon the œdema present in morbus maculosus, as he saw very large swellings disappear after such injections. J. Richter disagrees with this statement regarding the absorptive action of collargol; he says its principal action is due to its disinfecting power. By means of injections, a general disinfection of the body takes place, together with an attenuation of the bacteria present in the primary foci, thus limiting the production of toxines, whereby the absorbing power of the body remains uninterrupted.—(*Berliner Tier. Wochen.*, *No. 16.*)

BELGIAN REVIEW.

By Prof. A. Liautard, M. D., V. M.

Considerations upon Umbilical Hernia in Colts [*Prof. Hendrickx*].—From an inquiry made among practitioners, the author derives the following conclusions: There is no doubt that heredity plays a great part in the frequency of the disease. The determining causes are less clear—tractions on

the cord, struggling movements of the colt, violent efforts for the expulsion of the meconium, etc. The means of treatment can be classified into five categories: (1) Hygienic means—The umbilical hernia disappears under the influence of the natural development of the animal; a dry and substantial food will promote this end. (2) Bandages—These are not very practical, being either difficult to keep in position, or, again, giving rise to deviation of the vertebral column. (3) Various topics—Subcutaneous injections of chloride of sodium or of zinc or of phenic acid. Good results are obtained in small hernias. Dayot advises the use of nitric acid. In Belgium an ointment made of chromate of potash is used. The skin is well massed and the ointment well rubbed in; the application is renewed after 24 hours. (4) Sutures and Ligatures—The latter are about abandoned as they are often followed by relapse or with eventration. Sutures are applied on the hernial sac or only upon the edges of the ring. This is the best mode; it is the radical cure. With good asepsy and anæsthesia they give good results in even large sized hernias. (5) Forceps and Clamps—These seem to be the preferred method with many. The author recommends the use of a metallic nippers or clamp. Prof. Degivé incises the sac, passes through the edges of the ring two wooden pins and over them applies a clamp, which brings the edges close together and insures the constriction of the sac. Should there be adhesions, they must be divided beforehand. Prof. Hendrickx insists upon the necessity of obtaining, in all cases, a large swelling, which insures the closing of the ring, of avoiding too much pressure, which promotes too rapid sloughing of the skin and gives rise to eventration.—*(Annales de Bruxelles.)*

THE RATIONAL TREATMENT OF CANKER OF THE FOOT [*Prof. Lienaux*].—Canker in the foot is a chronic eczema of the keratogenous membrane; it is constituted, like eczema, by a pure vascular process and manifested by congestion, œdema. This knowledge of the nature of the disease has suggested to the author to recommend in a general way the compression of the tissues which are diseased, and as medical applications those that would contribute to the absorption of the liquid exudation of the lesions, without interfering with the compressive and absorbing action of the dressing. He prefers the Danish mode of treatment, which he resumes as follows: First, the horse must be kept to work. The foot is well pared, the diseased horn is removed, the diseased tissues are carefully exposed, the projecting vegetations are excised and the whole is covered with sali-

cylic acid and a compressive dressing of moist wadding over it. A thick sole of leather is held by the shoe. The dressing is not taken off for three or four days; if there is some discharge, or, on the contrary, for eight days if the dressing or rather the canker is dry. On an average the treatment requires from three to four months. As much pressure is required, it is always advisable to cover the dressing with either liquid pitch or with Venice turpentine, which are held by oakum. Instead of salicylic acid one may use, if he prefers it, chlorohydrate of lime or boric acid.—*(Annales de Bruxelles.)*

VOMITIVE MEDICATION IN NASAL ASTHMA AND AGAINST SPELLS OF COUGH IN MITRAL ENDOCARDITIS OF DOG [*Prof. Lienaux*].—In small breeds of dogs, nasal asthma is quite common. The turbinated bones of dogs do not allow the discharge to escape freely from the nose, and the presence of mucosities gives rise to repeated sneezing and even to dyspnœic attacks which resemble those of asthma. The inhalation of ammoniacal vapors may render the mucosities more liquid and activate their expulsion by stimulating the sneezing. If this method fails, vomitives given for two or three days are followed by recovery. In apartment small pet dogs, already advanced in age, a dry cough by spells may be observed. This is sometimes related to pulmonary tuberculosis, to polypi of the trachea, to œsophageal spiropterosisor, to pulmonary strongylosis; but most ordinarily it is under the influence of mitral endocarditis, with insufficiency of the opening. By auscultation, one will hear a soft, systolic murmur with its maximum at the point of the heart and in its posterior part. The mitral insufficiency has for cause the passive congestion of the lung and the chronic bronchiolitis. Ordinarily, expectorants may calm the cough and some results are obtained with iodides or bromides of potash in large doses. But even then vomitives will do wonders. Prof. Lienaux prefers ipecac or an emetic, but employs specially apomorphine in subcutaneous injections, in from 5 to 10 milligram doses, according to size of the animal. These injections can be repeated once or twice at two days apart. Sometimes one is obliged to resort to them again after a few months.—*(Annales de Belgique.)*

PERITONITIS WITH PURULENT COLLECTION IN THE EPIPLOIC CAVITY OF A YOUNG STEER [*A. Vanden Eeckhout*].—The subject was one year old. Ailing since three days, when he exhibited abdominal symptoms, tympanites (relieved by puncture of the rumen), loss of appetite, of rumination, with fæces

frequently passed and covered with mucosities. On percussion of the abdomen on both sides, in the inferior part, dullness was detected on a horizontal line. Puncture was made, and about seven litres of fluid extracted. The animal was sent to the author, and the same conditions were observed. The steer was dull, temperature 38.2 C.; pulse rather accelerated, 70 to the minute; respiration 22. Rumination stopped, abdomen tympanitic and the walls much distended, implying that peritonitis was also present. The dullness was present on a horizontal line as before. A puncture gave escape to about 50 litres of whitish fluid, which allowed to stand left a quite abundant deposit. The case was one of purulent peritonitis, whose cause was difficult to make out, as they are quite numerous. Death occurred after a few days. At post-mortem it was found that the mediastinal lymphatic glands were very large and tuberculous. The parietal peritoneum showed little alterations, but in its inferior part it had contracted a firm adherence with the great omentum, and in the cavity of this last, which was greatly distended, some 50 litres of purulent fluid were found. The most minute examination of all the organs failed to expose any lesion which could serve to explain the presence of such collection. The point of importance was the error of diagnosis. Indeed, while all the symptoms seemed to justify one of inflammation of the peritoneal cavity, this proved perfectly free from disease. All the lesions were located in the great omentum.—(*Annales de Belgique.*)

ON THE IMPORTANCE OF RECTAL EXAMINATION IN THE DIFFERENT MANIFESTATIONS OF COLICS IN HORSES [*M. Geerts*].—It is certain that there are cases where one may be justified in omitting it, but with all that one is obliged to acknowledge that rectal examination is a most valuable assistant in the proper diagnosis of colics and one by which the life of patients can be saved. As an evidence, the author relates three cases of great interest. The first observation is that of a case of colic due to dilatation of the bladder, where this organ had to be punctured and emptied through the rectum. An animal had violent colic, was treated by the owner; instead of improving got rapidly worse, and as he was about dead, the author was called. In the presence of the bad aspects of the case, rectal exploration was made at once, and as the hand entered the rectum, the bladder was felt enormously distended. As the horse struggled and made attempts to throw himself down, there was danger of the bladder bursting. No catheter was at hand,

but the writer had the trocar of one of Dieulafoy's aspirators; he plunged it into the bladder through the rectum and removed some six litres of urine. The recovery of the horse was almost instantaneous. All symptoms subsided at once and the horse immediately recovered. The result was certainly due to the rectal examination. The second case recorded is headed "Erratic Abscess of Strangles; Mechanical Arrest of Fæces in the Rectum; Colics." Some two months previous this Shetland pony had strangles and on various occasions abscesses had to be opened in the maxillary space, in the retro-pharyngeal region, etc. He was again taken sick, but this time he had colic. It was not violent, but the abdomen was tympanitic, and he made violent expulsive efforts. Exploration through the rectum was made and a fluctuating tumor was felt hanging from the roof of the pelvis. In manipulating it, it burst and a large quantity of pus was expelled. The horse made some efforts and a greater quantity of pus followed. Continuing the exploration another abscess was felt on the left supero-lateral side of the pelvic cavity. This demanded a firm pressure of the index finger to penetrate into it, which was followed by an abundant discharge of pus. The horse was then relieved of a mass of fæcal agglomeration, weighing about 600 grams. Ulterior treatment was very simple and followed by rapid and final recovery. The third case was one where no treatment was resorted to, but where rectal examination justified the advice of having the animal destroyed. He had colics due to mechanical stoppage of fæces in the large and small colons, resulting from the presence of generalized melanotic growths in all the organs of the body.—(*Annales de Belgique.*)

Dr. J. H. McNeil, Dean of the Division of Veterinary Medicine of the Iowa State College, was chief veterinarian, in charge of all animals and the horse exhibit ring at the recent International Live Stock Show at Chicago, December 1st to 8th, 1906.

Simple Blacksmith.—When a blacksmith was asked how much he would charge for shoeing a horse he demanded only a cent for the first nail, two cents for the second nail, four cents for the third nail, and so on through the thirty-two nails in the horse's four shoes. The owner of the horse at once accepted the terms of the contract, but found it impossible to pay the bill, for the amount reached the sum of 2,984,257,298 cents by the time the job was completed.

ARMY VETERINARY DEPARTMENT.

THE ARMY BILL IN DANGER.

ITHACA, N. Y., Jan. 21, 1907.

Editors American Veterinary Review:

DEAR SIRS:—I hear from Drs. Jewell and Turner that the Army Bill is again in peril, having been first delayed that members might scrutinize it, and then doomed by the word of the Speaker to remain in committee during the present short session. A bill favored by the Minister of War and Army Board should be accepted at its face value, unless some unworthy feature or motive can be shown. In the latter case we would be the first to oppose it. The time is now short, but if you can still insert in the February REVIEW a call to all members of the A. V. M. A. to promptly appeal to their Representatives and Senators it might yet be possible to bring the bill to a successful issue before March. Very truly yours, JAMES LAW,

President American Veterinary Medical Association.

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THE COURSE IN TROPICAL MEDICINE AT LIVERPOOL.

FORT MYER, VIRGINIA, Jan. 6, 1907.

Editors American Veterinary Review:

DEAR SIRS:—Having recently returned from Liverpool, England, a few remarks pertaining to the University which I attended for several weeks by order from the Secretary of War, taking a course in the School of Tropical Medicine, and also some information about the British Army Veterinary Department, may be of interest to the veterinarians of our service.

This course consists of lectures in pathology, bacteriology, entomology, parasitology, meat inspection and work in the laboratories, two lecturers being assigned to this work (Drs. Annett and Newstead). This course is intended more for medical students than for veterinarians, as the British Army Veterinary Department was not represented, although three medical officers are members of the present class. I would advise any of our army veterinarians that intend taking this course to ask for at least a three months course, as six weeks is entirely too short a time to get much out of a course of this kind. The tui-

tion fee, which you must pay yourself, is $50.00 for three months, commencing either in October or January. During this school detail you are given full pay, but not allowed commutation of quarters, and, as living expenses are high in England, it makes an expensive detail, and I think a post-graduate course at some of our Eastern colleges would be equally as beneficial, as you get but little pertaining to tropical diseases.

Dr. Nockolds. of the 1st Cavalry, who attended this course with me, read a paper on "surra," which was well received by both instructors and students, as none present had ever had any practical experience with "surra," and they took notes throughout the reading of his paper. The Doctor has asked to be ordered to Africa to work with Prof. Kock, who now believes he has a cure for "sleeping sickness," which, if true, should solve the "surra" problem.

While in London, I had an opportunity of visiting the Horse Guard (regulars) that are stationed at White Hall, and noticed a number of changes from our cavalry service, as regards shoeing, feeding, and general care of their mounts, which are far superior to those we use and more uniform, everything being clipped. Their stables are built from a hygienic standpoint —iron mangers, tile feed boxes and tile floors, with glazed bricks for sides and ceilings, so that in case of any contagious diseases a stall or stable may be thoroughly cleansed.

The Veterinary Department is under one director-general, who has the rank of a major-general. Veterinarians enter the service as a 1st lieutenant, being promoted to a captaincy after five years' service; after ten years as captain he receives his majority. Lieutenant-colonels are selected by the Secretary of State from the majors having fifteen years' service, besides three years spent in India, and colonels are selected from the lieutenant-colonels having five years in that rank. The veterinarian's uniform corresponds to the medical officer, the only difference being in the collar device.

Their examinations for promotion are on the following subjects: Meat inspection, diseases of cattle and horses, shoeing, practical work with the microscope, and military saddlery. All veterinarians are given a course at Aldershot (their military school) before being assigned to a command.

I also had the good fortune while in London of being present at the opening of the Smithfield Live Stock Show, which is supposed to be the finest in the world, the King and Prince of Wales both being present, and the Prince of Wales acted as

the presiding officer at the opening of the club. They excel us in the breeding of cattle and sheep, but I consider our hogs superior to any noticed there.

Our laws regarding the inspection of meat and milk are more rigid than theirs, and tuberculosis is a common disease with them.

The King's stables at Buckingham Palace and Windsor Castle are under the care of Prof. W. Owen Williams, and are both palaces themselves. The horses used are the best obtainable. Cleveland bay seems to be the favorite breed, and the Irish hunter used for saddle purposes. I saw but little difference in their prices from ours for the same type of horse.

WALTER FRASER,
Veterinarian, 13th Cav.

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THE ARMY VETERINARY BILL IN CONGRESS.

(*From the Army and Navy Journal, December 22, 1906.*)

The Senate on December 18 considered without final action S. 3927, which relates to the veterinary service of the Army. Explaining the bill Senator Warren said: "Formerly veterinary surgeons were either taken from the enlisted force or the Department hired as many 'horse doctors,' as they were termed, as were necessary to supply the regiments of Cavalry and Artillery. That was found to be a poor policy, because the men hired for that purpose were not sufficiently educated and capable. A few years ago a law was enacted which provided that a certain number of the veterinary surgeons should have the pay and allowances of second lieutenants, and outside of that number a certain number of others should be employed at $75 a month. That plan has been found to be inefficient, and is growing more and more so. To-day horses are high in price and hard to get. They should have good care or we lose a great deal of the money invested in them, because of the ravages of disease and death. There is a great demand for good veterinary surgeons. There is also a great demand for veterinarians with sufficient scientific education to enable them to act as inspectors in the Department of Agriculture. The pending bill proposes to take the old force now in Army service and discharge them all, except such as have been found satisfactory and efficient and have been in the Service fifteen years; these to be commissioned as first lieutenants without further examination, they having had fifteen years' service and been found satisfactory. Then so many of the other

old employees as may pass the examination, physical, mental, and otherwise, may be admitted. To make up the balance of the force necessary, citizens of the United States, between the ages of 21 and 27, single, and graduates of veterinary colleges, may apply, and, upon passing the examination, receive commissions and all the pay and allowances of second lieutenants. But they do not have the rank. After ten years' satisfactory service these men receiving pay and allowances of second lieutenants may be promoted to the pay and allowances of first lieutenants, and they may also have at the end of their active service, when 64 years old, retirement as first lieutenants. That is really all there is to the bill."

Senator Hale asked whether the bill does not establish a new corps—a veterinary corps in the Army—and asked that it lie over to give time to examine it. Senator Lodge in reply said that some years ago he had opposed a bill which did create a veterinary corps, but that the present bill he had found on careful examination "establishes no corps and confers no rank." "It does not even squint at the establishment of a corps," added Mr. Warren. He went on to explain that at the present time a certain percentage of the veterinarians in the Army are commissioned as veterinarians, with the pay and allowances of second lieutenants; the balance are simply employed civilians. This bill proposes, instead of having part of them "hired men" and the other part second lieutenants, that they shall start with the pay and allowances of second lieutenants. A clause of the bill authorizing the President "to appoint and immediately retire" certain veterinarians will apply, Mr. Warren said, to only two men, one over seventy and the other sixty-seven years old. He gave notice that he intended to bring the bill up again soon and then hoped for its final passage.

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PERSONAL NOTES.

DR. CHARLES H. JEWELL MARRIED.—On Saturday, Dec. 22, Dr. Jewell, Veterinarian U. S. Army, Fort Riley, Kansas, was married to Miss Anna Oesterhaus, of Fort Riley, and left on a tour of the East, to return and take up their residence at the Fort by Jan. 15. The bride is a sister of Dr. John Oesterhaus, veterinarian, now stationed in the Philippines. The "Army Veterinary Department" and Dr. Jewell's many friends throughout the veterinary ranks of the country, wish him much joy in the connubial state.

TUBERCULOUS INFECTION BY INGESTION OF GERMS.

(*Special Dispatch to New York Times.*)

Washington, Jan. 6.—A report on the relation of tuberculous lesions to the mode of infection, submitted to the Secretary of Agriculture by Dr. E. C. Schroeder and W. E. Cotton, of the Bureau of Animal Industry, contains information resulting from extensive experimentation which goes a long way toward upsetting the popular notion that pulmonary tuberculosis, or consumption, only follows the direct inhalation of the tubercle bacilli from dried sputum directly into the lungs.

Tuberculosis was produced in the lungs of a calf and three hogs, in the course of these experiments, by inoculation near the end of the tail. This indicates, in the view of the experts, that the lungs may readily become the seat of tuberculous disease, no matter through what channels the bacilli gain entrance to the body, and that the location of lesions in the lungs can no longer be considered as reliable evidence that the infection entered by means of the respiration.

Too much importance has been attached to the agency of dried sputum in the study of tuberculous infection, the investigators say, and too little to the more serious danger from fresh or moist tuberculous material, which enters human food in many ways, one of the commonest of which is attributable to the tuberculous dairy cow. Evidence has been presented to support the contention that the lungs of these cows are more directly exposed to the infection through the lymph channels and blood current than in any other way.

In the experiments with cattle and hogs subcutaneous injections of virulent tubercle bacilli were made as near the ends of the tails of the animals as possible, because this point was the furthest removed available portion of the body from the lung, and the location from which the infection of the latter seemed least likely to occur.

Twenty-three days after a healthy calf had been inoculated with the virulent preparation the animal died. Post-mortem examination showed that the lungs were badly infected, while the other organs apparently were in a normal condition. The lungs presented a perfect picture of a fatal miliary tuberculosis. The hogs which were inoculated were killed, and the same conditions were found in the lungs.

The experimenters believe that in these cases the bacilli

were either taken up directly by the capillaries and thence carried to the lungs by means of the venous circulation, or else by the lymphatics into the veins and thence to the lungs. The report says:

The practical conclusion to be drawn from the results obtained is that ingestion is a greater danger than the respiration of tubercle bacilli, especially as the tubercle bacilli may be ingested in the fresh state in which they are expelled from tuberculous lesions and cannot be respired until they have been subjected to various attenuating processes. The substance in which tubercle bacilli are enveloped or imbedded when they leave the infected organs under ordinary and usual conditions requires considerable time before it can be sufficiently dried and pulverized to float in the air. Bacilli do not rise from moist surfaces and float in the air. The complete desiccation that must occur in advance of pulverization is either a comparatively slow process or is hastened by agencies, like the heat from the direct rays of the sun, that have a potent influence against the vitality of pathogenic bacteria.

Sputum, for example, dries on the surface in a way that coats it with a protective membrane through which evaporation progresses slowly; it is a very adhesive substance, and becomes more so during the first stages of drying, and it must be exposed when thoroughly dried to actual attrition before it can be detached from the surface on which it has dried and reach a sufficient disintegration to be blown about as dust.

The experimenters summarize their conclusions as follows:

Tuberculosis is a disease contracted through the ingestion of tubercle bacilli.

The lung is the most frequent organ affected, independently of the point at which the infectious material enters the body.

Tuberculous infection may pass from one part of the body to another remote to it without leaving a chain of lesions to mark its path.

Fresh tuberculous material has the highest, and dried and pulverized material a doubtful significance.

Tuberculous material from cattle has the highest virulence for all tested species of the mammalian kingdom, to which man anatomically and physiologically belongs, and tuberculous material from man has a lower virulence.

Man is constantly exposed to fresh tuberculous material in a helpless way through his use of dairy products from tuberculous cows and cows associated with tuberculous cattle.

"It seems from this array of facts," the report says, "every one of which is based on positive experimental evidence, that we should feel no doubt regarding our plain duty, which is, no matter what other measures we adopt in our fight against tuberculosis, not to neglect one of the chief, if not the most important, source of infection—the tuberculous dairy cow."

SECRETARY LYMAN was at the meeting of the Veterinary Medical Association of New Jersey doing missionary work for the A. V. M. A.

THE Fasig-Tipton Co.'s sales of thoroughbreds and trotters in 1906 aggregate upward of $2,500,000. Of this amount about $750,000 were paid for harness horses and $1,750,000 for runners. With one exception the year's business is the largest in the history of the concern.

DR. RICHARD P. LYMAN, Secretary of the American Veterinary Medical Association, is preparing a list of all veterinarians in the United States and Canada who are eligible to membership in that Association. He states that, although he has not completed his calculations, it appears that there are about 3,800 in the two countries. When it is remembered that the membership of the A. V. M. A. is only slightly in excess of 600, it is apparent that much work remains to be done in bringing this large number under the influence of the international organization. Dr. Lyman is doing splendid work in the Secretary's office, and the Association was fortunate in securing him.

COMMISSION ON MEAT INSPECTION.—A commission has been appointed by Secretary Wilson to meet in Washington February 4, to consider the revision of the meat inspection regulations of the Department of Agriculture, which pertain to the rules and regulations to govern the disposition of carcasses affected with various diseases and abnormal conditions. The body to which these questions will be referred is to be known as "A Commission on Meat Inspection." The members are: Dr. W. H. Welch, professor of pathology, Johns Hopkins University; Dr. C. W. Stiles, Chief Division of Zoölogy, United States Public Health and Marine Hospital Service; Dr. Leonard Pearson, Dean, Veterinary Department, University of Pennsylvania; Dr. L. Hekteon, professor of pathology, University of Chicago; Dr. Joseph Hughes, President of Chicago Veterinary College; Dr. V. A. Moore, professor of comparative pathology, Cornell; Dr. M. J. Rosenau, Director of Hygienic Laboratory, U. S. Public Health and Marine Hospital Service.

CORRESPONDENCE.

THE VETERINARY ALUMNI OF NEW YORK UNIVERSITY.

NEW YORK, Jan. 12, 1907.

Editors American Veterinary Review:

DEAR SIRS:—Occasionally it becomes the duty of association officers to jog the memories of willing but neglectful members to the first and constant duty to their alumni society, and I ask you to kindly publish this letter, so that our many alumni may have the opportunity to respond to this request, thereby helping the officers, the society, and themselves.

Probably the proudest moment of our lives is when we have earned the privilege of becoming a member of our college alumni society. Many of us remain true to our alma mater, while others occasionally remember that they are children of the school, but forget altogether the society and its important work. Consequently, without their support, the society ceases to flourish, and many well-laid plans stagnate, while a little forethought would perfect them, to the great benefit of every alumnus. This is not difficult to understand when we realize that alumni societies are maintained solely for the benefit of the alumni, and that all the funds are used in their interests.

Many universities point with pride to their alumni societies, strong in membership, with well-attended meetings, and which are a bulwark of strength to their alma maters. Can we say as much for our Alumni Association of New York University? I think not. When the New York College of Veterinary Surgeons and the American Veterinary College consolidated and became part of the time-honored New York University, their respective alumni societies also united and became the veterinary branch of New York University Alumni Association; yet how few have shown their appreciation of this additional honor in a substantial way. Is it a general lack of interest or of definite information that has kept so many alumni outside of the fold? Many of the University alumni associations issue handsome certificates of membership, which add dignity to those which have been conferred by the college, and it has long been our intention to issue a similar certificate; but, as may be readily understood, lithographic stones are expensive, but with the support of every alumnus this and like benefits may be successfully executed without unnecessary delay.

The dues are one dollar annually, and it is the plain duty of every alumnus to become an active member and help us to accomplish something worth while, at the same time placing the veterinary branch of the N. Y. U. A. A. where it should be—second to no alumni society.

The time is fast approaching when we will again arrange our professional duties so that one evening may be set apart for recreation, the meeting of old friends, and the many pleasures of an annual alumni banquet. To those who have not attended in the past, I desire to say that this is one evening they cannot afford to miss, and I want all to make an effort this year to be with us. The committee of arrangements is endeavoring to secure a place to hold the banquet which will be convenient to out-of-town members and to have the price per plate within the easy reach of all. Due notice of date and other particulars will be given through the REVIEW.

Now, then, fellow-alumni, send in your dues for this year ($1), which will be acknowledged by receipt from the Secretary.

THEODORE F. KREY, *Secretary*,
141 W. 54th Street, New York City.

PROPOSED GREAT VETERINARY COLLEGE FOR THE WEST.

CHICAGO, ILL., Jan. 12, 1907.

Editors American Veterinary Review:

DEAR SIRS:—In reply to your note asking me to obtain all the details possible of the proposed veterinary school to be established in connection with the University of Illinois, I beg to state that I have made an investigation, and herewith submit all facts that are known to the professional public outside of those immediately concerned.

It is proposed that there shall be established under the direction of the University of Illinois a Veterinary College, either within or in close proximity to the Union Stock Yards of Chicago, the exact site not having yet been chosen. The especial purpose of this proposed new institution is the training of "expert veterinary inspectors" for service in the U. S. Bureau of Animal Industry, although it is admitted that its graduates are to be thoroughly trained in every branch of the science. The proposition is said to be the direct result of a recent report to the German government by a special envoy sent to this country to study conditions in the packing industry. This report is stated to have contained strictures upon the quality of our in-

spectors, who were stated to be deficient in special training for the work of inspection. In the new college original research work will be taken up in connection with the medical department of the University, and, with the wonderful facilities afforded by the Union Stock Yards, many valuable results should be obtained.

The financial backing of the new college is the packing interests in Chicago, which, on December 13th, offered the University of Illinois $250,000 for the erection of buildings and the equipment of a veterinary college. In addition to this, they will give a ninety-nine years lease of sufficient land for the erection of the buildings and the future growth of the college. The State Legislature will be asked for an appropriation only sufficient to cover the actual running expenses of the institution.

The packers have stipulated that the University is to secure a veterinary faculty which will be unexcelled, and Germany and France will probably be asked to contribute to it.

The members of the veterinary profession of America welcome every institution which still further elevates the high standard of its chosen profession. Very truly yours,

B. T. WOODWARD, V. M. D.,
U. S. Bureau of Animal Industry, Chicago, Ill.

THE "SCREW-WORM" FLY.

BATON ROUGE, LA., Jan. 10, 1907.

Editors American Veterinary Review:

DEAR SIRS:—The remarks I made in my paper, "Our Insect Enemies," in connection with the habits of the "screw-worm" fly (*Chrysomyia macellaria*), viz.: "They are widely distributed now, and always are, to a more or less considerable extent, but I do not recall having heard of their attacking the living animal since the years alluded to," had only a local, or, perhaps, sectional reference, and were not meant to convey the impression that these flies might not be, or were not, found attacking animals in other parts of the world, since the years to which I made allusion—1891 and 1892. The statement was evidently a little ambiguous, or, at least, capable of some misinterpretation, as is shown by the letter of Dr. Donovan, in the January number of the REVIEW. Dr. Donovan's experience in Cuba with this dipteron is extremely interesting, and only goes to emphasize the importance of the rôle played by insects as

disease-producers and transmitters. I can fully appreciate the extent of the destructive work of these flies in Cuba, so graphically described by the Doctor, as I had very similar experiences in Louisiana during the years mentioned—but not since. And the statement I made was based upon this fact, which had, of course, a local application only. I may say that I had many cases (similar to the one cited in Dr. Donovan's communication) where the sheath was literally filled with larvæ, and also where the latter were embedded in masses in the glans penis, and having to be picked out with forceps after destroying them with such solutions as creolin, bichloride, etc. For several years after this fly-invasion, it was an everyday occurrence to see cattle minus portions of their tails (often the entire organ) as the result of larvæ hatched at, or near, some blood-speck or abrasion on some part of the caudal appendage; and also to witness horses and mules with one or both ears drooping down, where the larvæ had destroyed the supporting structures. In fact, one was not surprised at seeing almost any kind of deformity in animals that could possibly be occasioned by "screw-fly" larvæ. At the risk of appearing a little tiresome on this particular topic, I would just like to add, that besides the enormous destruction to stock caused by this fly, there are some other features connected with it that were quite interesting, and which came under my own observation and knowledge. One was the case of a mule brought to our University veterinary infirmary which had had two parallel cracks, about an inch or so apart, running down, or up, probably the latter, the front of the hoof, with the piece of intervening horn broken off, and a mass of granulation tissue (the sensitive tissue) projecting like a small teat or pap. I had decided to operate, either with the knife or cautery—I forget now which, as it is some fifteen or sixteen years ago—when I found, to my dismay at the time, that the "fly" had got ahead of me, and that the larvæ were already at work. My first impulse was to destroy them, but on second thought I decided to allow them to remain and see if they would not be able to render some surgical aid in the removal of the neoplasm. To my agreeable surprise, they accomplished their work in a masterful manner, levelling down the parts as well, if not better, than I could have done by surgical or other means. Of course, the larvæ had to be watched very closely, as they worked fast, and when they had completed their part of the operation to my satisfaction, I politely dismissed them with a "fee" of bichloride solution. After giving to the foot the

necessary after-attention, the horn grew down and the animal made an excellent recovery.

Another instance where the fly "was made use of" at that time was in the case of old chronic fistulous tracts, as in the neighborhood of the withers, for example. Whenever the larvæ attacked such parts, and were carefully watched, and killed before doing any harm, they usually destroyed the adventitious tissue present, and seemed to leave the parts in a condition to heal, with the aid, of course, of disinfectant and antiseptic after-treatment. Although I did not have one of these cases under my own personal supervision, I knew of several which resulted favorably. Rather useful employment for such a destructive pest.

In conclusion, let me say that, although I believe a climate such as prevails in Cuba is much more favorable to the propagation and development of certain forms of insect life, such as the one under consideration, than is that in more temperate regions, it would be difficult to imagine a worse state of affairs than that occasioned by the "screw-worm" fly in Louisiana during the two years alluded to in the early 90's. But, as previously stated, its destructive work ended then, so far as this state is concerned; and it was this fact I had reference to when I made the statement quoted by Dr. Donovan. I may say, however, that I am now rather glad, than otherwise, that my remarks were, apparently, misinterpreted, as the experience in Cuba, given by Dr. Donovan in his communication, is most instructive, and cannot fail to have been read with a great deal of interest by REVIEW patrons; besides being of value in further emphasizing the importance, to the profession, of a better knowledge of "Our Insect Enemies." W. H. DALRYMPLE.

TRYPANOSOMA LEWISI IN CUBA.

SANTIAGO DE LAS VEGAS, CUBA, Dec. 13, 1906.

Editors American Veterinary Review:

DEAR SIRS:—For more than two years, ever since I took charge of the Department of Animal Industry of the Cuban Republic, we have been watching carefully for evidence of any trypanosomatic disease among domestic animals. So far, I am happy to say, we have only found one species, *Trypanosoma lewisi*, in the blood of the common Norway rat, *Mus norvegicus*. We have examined the blood of 136 rats; of these 31, or nearly 23 per cent., harbored *T. lewisi* in the blood. Only one-fifth of

the infected rats were adults. One young rat about two-thirds grown was taken Feb. 17, 1906, and was kept under observation. At that date its blood was simply swarming with the parasites. On July 11th the parasites had begun to disappear, and on July 30th but few could be found. On August 30 they had disappeared entirely, and as no more were observed the rat was destroyed Dec. 5, 1906.

In many of the infected rats the blood was so filled with the parasites that it seemed impossible that an animal could live, but, so far as we could observe, the rats seemed to suffer no inconvenience from their presence. N. S. MAYO.

AT the annual meeting of the New Jersey Veterinary Medical Association, at Jersey City, on the 10th ult., there were visitors from four states—New Jersey, New York, Pennsylvania and Connecticut. Dr. E. L. Loblein, of New Brunswick, was elected President; Dr. Wm. Herbert Lowe was retained as Secretary, and Dr. Thomas E. Smith was placed in charge of the funds. The arrangements for the meeting were ideal, and reflect credit upon the local committee, of which Dr. Smith was chairman. His membership in the Knights of Columbus enabled him to entertain his friends at the Columbian Club, and he did so royally. The lodge room made an ideal convention hall, while the banquet room was utilized for the dinner, which was elegant in all appointments. The Association goes back to Asbury Park for its midsummer meeting, when a feature will be a clinic.

THE VETERINARY PRACTITIONERS CLUB OF HUDSON CO., N. J.—This is the name of a new club organized over in Jersey. The members decided to call it a club instead of an association, as their number is small and they wish to steer clear of rigid formalities so as to throw off a feeling of restraint when they meet together for an exchange of views on topics of professional interest. Dr. T. E. Smith, of Jersey City, was chosen President, and Dr. A. F. Mount, also of Jersey City, Secretary and Treasurer. The club will be in affiliation with the Veterinary Medical Association of New Jersey, incorporated in the year 1885 under an act of the Legislature for the promotion of veterinary science and art. The club received an invitation from the Veterinary Medical Association of New York County to hold its monthly meetings in conjunction with the latter, and at the January meeting a number of the members were present, including the President and Secretary.

BIBLIOGRAPHY.

SURGICAL AND OBSTETRICAL OPERATIONS. By W. L. Williams, Professor of Surgery and Obstetrics in the New York State Veterinary College. Embodying portions of the "Operationscursus" of Dr. W. Pfeifler, Professor of Veterinary Science in the University of Giessen. Second Edition, revised. Ithaca, N. Y.: Published by the Author. 1907.

It seems but a very short time since we had occasion to speak of the first edition of Dr. Williams' little treatise upon surgical operations, and the author must feel great gratification in being forced to issue another edition so soon, as it shows a decided appreciation of his efforts in improving and popularizing a number of very useful operations. Dr. Williams has made a decided impression upon modern surgery by the original study he has given to a number of procedures which are described in European works and by some which are original with him. Thus, while the Bayer operation for quittor belongs to the surgeon whose name it bears, it was not practiced to any extent in America until Williams popularized it by demonstrating the advantages which it possesses. So, too, with resection of the flexor pedis tendon, which, although described in other works on surgery, has been greatly simplified and improved by Williams' technic. The operation for poll-evil is, so far as we can discover, original with Williams, although it has been stated to have been previously described, while trifacial neurectomy, oöphorectomy through the ballooned vagina with special ecrazeur, and quite a number of others must always date back to his original description.

In the present edition, the author has made many additions of considerable value. For instance: There is a decided amplification of his former article on trephining of the sinuses; a complete change in the technic of amputation of the tail, as well as the method of amputation of the penis; he has introduced the operation for roaring which he has been performing for the past year (excision of the vocal cords and ventricle of the larynx); a new procedure in the castration of ridglings, etc. His standard obstetrical operations remain as in the first edition, with the exception of some amplifications in technic.

One of the greatest charms about Williams' book is the high quality of the illustrations, which are the best we have seen in any work upon the subject. He has expended both time and money to have them as near perfection as possible, and his printers have successfully seconded his efforts, for the quality of the mechanical construction of the work is beyond criticism.

We hesitate to compute the cost of a complete work upon surgery by Williams if the same character of illustrations were used, yet the value of such a work would be inestimable, and it is to be hoped that some day we will have it.

The additional matter is well worth the price charged for the book, so that those who are in possession of the first edition will not go amiss if they purchase the newer revision, and those who have never had it at all, are decidedly at a disadvantage in practicing the art of surgery upon domestic animals. (R. R. B.)

OBITUARY.

F. E. WILLIAMS, V. S.

Following an attack of peritonitis, Dr. F. E. Williams, of Ovid, N. Y., died on December 26. He graduated from the Ontario Veterinary College in 1889, and had been in practice in Ovid since that time.

DAVID MCKIBBIN, JR., U. P. '06, is in general practice at San Diego, Cal.

THE ALMOST HUMAN DOG.—The dog undoubtedly exhibits more human traits than any other lower animal, and this by reason of his long association with man. There are few of our ordinary emotions that the dog does not share, as joy, fun, love of adventure, jealousy, suspicion, comradeship, helpfulness, guilt, covetousness and the like, or feelings analogous to these—the dog version of them. I am not sure but that the dog is capable of contempt. The behavior at times of a large dog toward a small, the slights he will put upon him, even ejecting his urine upon him, is hardly capable of any other interpretation. The forbearance, too, which a large dog usually shows toward a touchy little whiffet, never resenting its impudent attacks, is very human. "A barking dog never bites" is an old saying founded upon human nature as well as upon dog nature. The noisy blusterer is rarely dangerous, whether man or dog. I do not agree with Stevenson that the dog is a snob. The key to a dog's heart is kindness. He will always meet you half way and more. I have been asked why the farm dog usually shows such hostility to tramps and all disreputable-looking persons. It is not their looks that disturb the dog, but their smell—a strange, unknown odor.—*(John Burroughs in the Outing Magazine.)*

SOCIETY MEETINGS.

ILLINOIS STATE VETERINARY MEDICAL ASSOCIATION.

The 24th annual meeting of this Association, held in the parlors of the Victoria Hotel, Chicago, December 4 and 5, 1906, was called to order at 10 o'clock A. M., Dec. 4, by the President, Dr. W. H. Welch, of Lexington, with the following officers, members, and visiting veterinarians present:—Drs. W. H. Welch, Lexington, President; C. C. Mills, Decatur, Vice-President; F. H. Barr, Pana, Secretary; George B. Jones, Sidel, and J. H. Crawford, Harvard, of the Board of Censors; and Robt G. Walker, Chicago, Treasurer. Members and visiting veterinarians as follows:—Drs. J. M. Kaylor, Barry; John T. Rayn, Chicago; W. J. Martin, Kankakee; H. A. Presler, Fairbury; F. E. Jones, Rochelle; J. T. Nattress, Delavan; B. F. Hudson, Mowequa; J. S. Hollingsworth, La Salle; R. M. Story, Princeton; C. G. Glendenning, Clinton; O. F. Butterfield, Libertyville; W. H. Weathers, Magnolia; D. L. Travis, Vandalia; H. C. Singer, Cowden; C. R. Andrew, Atlanta; G. M. Predmore, Avon; J. F. Gillispie, Tuscola; Carl H. Yoder, Watseca; J. R. Taylor, Austin; A. G. Gieske, Barrington; J. G. Hayes, Freeport; Jacob Mau, Herscher; P. H. Johnson, Marion; T. J. Gunning, Neponset; R. E. Nesbitt, Lincoln; B. T. Woodward, Oxford, Pa., Recording Secretary Pennsylvania S. V. M. A.; C. L. Lumby, Chicago; R. F. Hoadley, Yorkville; B. T. Webster, Winchester; E. A. Jinkens, Shelbyville; W. E. Gilbrath, Wheaton; M. A. Hollingsworth, Rock Island; N. P. Whitmore, Gardner; N. W. Kyle, Colfax; Wm. F. Myers, Ft. Wayne, Ind.; W. B. Lewin, Russell; C. C. Mills, Decatur; H. D. Chamberlain, Belvidere; A. H. Baker, Chicago; C. F. Griiner, Chicago; A. C. Worms, Chicago; L. C. Tiffany, Springfield; W. F. Weese, Ottawa; H. F. Pegan, Cochranton, Pa.; James E. Stansbury, Middleport, Ohio; C. L. Passimore, Huntley; A. M. Wray, Richmond; G. W. Evert, Galena; C. S. Hayward, Mattoon; T. S. Hitch, Griggsville; W. W. Lichty, Woodstock; M. M. Fletcher, Bethany; C. C. Danber, Sturgis, Mich.; N. I. Stringer, Paxton; J. F. Roub, Monroe, Wis.; W. V. Nesbitt, Maroa; Geo. P. Frost, Chicago; M. E. Gleason, Gibson City; J. C. Harland, Mukwenago, Wis.; John Scott, Peoria; J. Fred Stoner, Bement; Chas. A. Pierce, Elgin; T. O. Sheasburn, Walnut; Andrew English, Chicago; W. G. Hassell, Grayville; P. H.

Marsh, Tonkawa; H. J. Mongeau, Manteno; C. D. Maulfair, McNabb; O. H. Lintner, Mendota; S. S. Baker, Chicago; Joseph Hughes, Chicago; E. L. Quitman, Chicago; Philip Quitman, Chicago; L. A. Merillat, Chicago; E. Merillat, Chicago; J. M. Parks, Chicago; R. C. Moore, President Kansas City College.

Minutes of the last meeting, held at Bloomington, July 12, 1906, were read and approved.

The following applications for membership were read, and, upon ballot being spread, were all declared elected to membership: Drs. M. H. McKillip, Chicago; Joseph M. Kaiser, Chicago; John Millar, Chicago; John Henderson, Chicago; Albert G. Gieske, Barrington; Oscar Silfver, Peoria; Frank T. McMahon, Chicago; T. J. Menestrina, East St. Louis, Ill.; C. L. Sawyer, Kankakee; H. M. Rinehart, Blandinville; C. M. Walton, Rantoul; J. F. Gillispie, Tuscola.

President W. H. Welch now delivered the annual address, which was at some length and touched upon many matters of importance to the Association.

Under head of new business, Dr. W. J. Martin, of Kankakee, placed in nomination for honorary membership Dr. A. D. Melvin, Chief of the Bureau of Animal Industry, Washington, D.C., and upon vote of the Association Dr. Melvin was unanimously elected to honorary membership.

At this time attention was called to the fact that John McDonald, an oldtime honorary member of this Association, should always be designated by the addition to his name of the degree initials "M. D.," on account of there being an empiric in the locality who boasted of being an honorary member of this Association on account of his name being John McDonald. A motion was made that the incoming President and Secretary be instructed to have printed revised By-Laws and list of membership, the number to be left to their discretion. Upon vote, motion carried.

Dr. George B. Jones now opened a discussion upon the violation of the law regulating the practice of veterinary surgery and medicine, followed by Drs. R. G. Walker, W. J. Martin, N. P. Whitmore, W. H. Welch, J. F. Ryan, J. T. Nattress, J. R. Kelso, and F. H. Barr. A motion was now made by Dr. George B. Jones, supported by Dr. B. F. Hudson, that the President appoint a committee of three to draft suitable resolutions to cover the subject as discussed and that the incoming Secretary be directed to send a copy to every veterinary college in North

America under seal of the Association. On vote, motion was carried, and President Welch appointed Drs. Jones, Martin and Ryan to draft resolutions as directed, and to report when ready.

At 12 o'clock, noon, meeting adjourned for lunch, to reconvene at 1.30.

Called to order at 1.30 P. M., by President Welch.

Reading of papers being next in order, Dr. W. H. Weathers, of Watseca, read a very able paper entitled "Arecoline Compared with Eserine in Treatment of Colics."* This paper elicited quite an animated discussion, in which the following veterinarians participated: W. B. Lewin, N. I. Stringer, C. G. Glendenning, Robt. C. Moore, B. T. Woodward. Dr. Moore, who is President of the Kansas City Veterinary College, after taking part in the above discussion, delivered a very able and instructive talk pertaining to the profession in general. Dr. Woodward, Recording Secretary of the Pennsylvania S. V. M. A., made a most pleasant address, setting forth the status of the profession in Pennsylvania, which was most enthusiastically received. Dr. William F. Myers followed Dr. Woodward with a pleasant talk, which the I. S. V. M. A. most highly appreciated. Discussion of Dr. Weathers' paper was again resumed by Drs. S. S. Baker, George B. Jones, W. B. Galbraith, J. T. Nattress, W. J. Martin, and C. C. Mills. On motion, discussion closed.

Dr. Bentley F. Hudson read a paper entitled "Texas Fever," which was discussed at some length by Drs. Woodward, Mills, and Stringer. On motion, discussion closed.

Dr. Carl H. Yoder's subject, "A Case of Laminitis," brought forth a long and interesting discussion by Drs. Jones, Presler, Glendenning, Baker, Martin, Mills, Nattress, Stringer, Kelso, and Crawford. Upon motion, discussion closed.

Dr. H. C. Singer's paper on "Agalactia in the Mare"* was especially well prepared and brought forth a most animated and instructive discussion, which to the country practitioners was of inestimable value, in which Drs. Mills, Martin, Nattress, Presler, S. S. Baker, and Stringer took part.

Dr. Henry Mau's subject was "Foul in the Sheath." This paper was well written and the Doctor showed conclusively that the condition was due entirely to phymosis, which fact was brought out by a lengthy discussion by the following: Drs. Mills, Martin, A. H. Baker, Nesbit, Jones and Nattress.

* Published elsewhere in this number of the REVIEW.

The committee appointed to draft resolutions relative to violation of Veterinary Practice Act being ready to report, submitted the following :

" WHEREAS, It has come to the knowledge of this Association that students of veterinary medicine and surgery are engaging in the practice of said science during their freshman, junior, and senior years before graduating or receiving a permit to practice by the Board of Veterinary Examiners of this state, and

" WHEREAS, It is the opinion of this Association that such attempt of veterinary students to engage in general practice before having properly fitted themselves for the same are violating the law of their state and are thereby laying themselves liable to prosecution under said law, and

" WHEREAS, It is the opinion of the members of this Association that the faculties of the veterinary colleges of this and adjoining states should make it mandatory upon their students that they spend the summer season between college sessions under the immediate supervision of a graduate of a recognized veterinary college, and

" WHEREAS, It has come to the knowledge of this Association that certain members of the veterinary profession in this state have been making a practice of employing veterinary students and opening offices for same in separate towns to engage in the practice of veterinary medicine and surgery, and

" WHEREAS, Any member of this Association who has been known to have engaged in such procedure shall be liable to suspension or expulsion from this Association, and

" WHEREAS, It is the firm opinion of this Association that no person who is not a graduate of a recognized veterinary college and holding a license from the Board of Veterinary Examiners is entitled to engage in practice in this State, unless under the immediate supervision of said licensed practitioner ;

" *Resolved*, That a copy of these resolutions shall be mailed to each veterinary college in North America, and also be spread upon the records of this Association.

" Signed { George B. Jones,
John F. Ryan,
W. J. Martin, *Committee.*"

The resolutions were debated by Drs. A. H. Baker, Jones, Stringer, Glendenning, Walker, Scott and Barr.

On motion, the Committee was discharged and resolutions balloted upon. Adopted by a majority vote, and the Secretary

was instructed in accordance with the original motion to send a copy to every veterinary college in North America.

The following names were read as applicants for membership: Drs. Chas. Lewis Lumby, Chicago; J. R. Taylor, Austin; F. B. Webster, Winchester. On ballot, all were declared elected.

The Secretary read letters from the following: F. F. Brown, Vice-President of the Kansas City Veterinary College, expressing regret at inability to attend the meeting; Mrs. W. H. Curtis, Meringo, Illinois, widow of our departed friend and fellow-member, thanking the I. S. V. M. A. for sympathy expressed in her recent hour of trial, culminating in the death of an honored member, a loving husband, and a kind and indulgent father.

Dr. E. L. Quitman, President of the Chicago Veterinary Society, now announced the hour of the banquet as 7.30 P. M., and again invited all members of the I. S. V. M. A. and visiting veterinarians to partake of a banquet tendered by the Chicago Veterinary Society. On motion, meeting adjourned to meet at 10 o'clock A. M., Dec. 5th.

At 7.30 all gathered at the dining room of the Victoria Hotel, where a most elaborate banquet was spread, accompanied by music from a special orchestra. Dr. E. L. Quitman, after a few brief remarks, appointed Prof. Joseph Hughes as toastmaster, who, after a very pleasant speech of acceptance, called upon the various ones present, who responded in turn.

Dr. W. H. Welch, President of the I. S. V. M. A., was called, who in a very able way addressed those present, setting forth the fact that the very excellent repast and entertainment was but one more evidence of the high esteem and good fellowship in which the Chicago Veterinary Society held the State Association, and that they on every occasion from the first had proven themselves our friend.

Next Dr. J. M. Parks, of Chicago, was called upon, who rendered a vocal selection, which proved that there was one at least among our number who was the possessor of an excellent tenor voice. Dr. Parks was heartily applauded and during the evening responded to the call of the toastmaster a number of times.

Dr. George McKillip, son of Prof. M. H. McKillip, President of the college which bears his name, was next called upon and delivered a very pleasant talk, which was applauded.

Prof. R. C. Moore, President of the Kansas City Veterinary College, was called next, and in a pleasant and entertaining

way reviewed the history of the veterinary profession in Chicago from twenty years ago to the present time, bringing out many pleasant features of interest to all present.

Mr. W. H. Collins, whose ability as a most excellent entertainer was well known to some of the members of the Chicago Veterinary Society, was present by invitation to assist in the entertainment. Mr. Collins on a number of occasions responded to the call of the toastmaster and requests of the guests and always dispensed a goodly amount of wit, which elicited peal upon peal of uproarious laughter. Mr. Collins proved himself to be a king of public entertainers.

Dr. B. T. Woodward, Recording Secretary of the Pennsylvania Veterinary Medical Association, made a very pleasant talk, setting forth the good will that exists between the associations of this and other states, and advocated vigorous alumnæ work.

A harp solo rendered by a member of the orchestra was most highly appreciated by all present.

Prof. A. H. Baker now responded to the call of the toastmaster, and in his usual pleasant and earnest way set forth the past and present status of the veterinary profession, and in closing predicted a bright and glorious future.

Dr. W. B. Lewin, Russell, Ill., now responded as the oldest practicing veterinarian present. Dr. Lewin voiced the feeling of all present by saying that he was glad to be here, and in a pleasant way, characteristic of himself, made a very interesting talk in behalf of the profession.

Dr. John Scott, Peoria, a member of the State Board of Veterinary Examiners, set forth some of the doings of the Board.

Drs. E. L. Quitman, L. C. Tiffany, J. J. Millar, L. A. Merillat, S. S. Baker, and many others responded to the call of the toastmaster. The entire evening was one of pleasure and one that will always be looked upon by the members of the I. S. V. M. A. with pleasure in the highest.

At a late hour "good night" was said, and each promised the other to meet at the second day's session of the I. S. V. M. A. at 10 o'clock A. M.

Dec. 5, 1906, meeting called to order at 10 o'clock A. M. by President Welch.

Reading of papers was resumed. Dr. W. G. Hassell, Grayville, presented a paper entitled "Ridgling Castration; Preparing Patient for Operation and After-Care."* This paper showed

* Published elsewhere in this number of the REVIEW.

careful preparation, and was vigorously discussed by Drs. Mills, Stringer, Glendenning, Martin, Presler, Jones and Weese.

Dr. L. C. Tiffany, of Springfield, "The Effects Sometimes Produced by Feeding Unsound, Immature and Mouldy Corn to Equines." This paper was well written and showed that its author had made a careful study of the subject, which was well presented and was most ably defended through a very animated discussion, in which the following participated: Drs. Lewin, Presler, Nesbitt, W. J. Martin, W. G. Hassell, George B. Jones, R. F. Hoadley, N. P. Whitmore, Glendenning, Galbraith and Weathers. The discussion brought forth a diversity of opinion as to the exact effects produced by these mouldy, immature, unsound foods.

The noon hour being at hand, meeting adjourned for lunch, to reconvene at 1.30 P. M.

At 1.30 P. M. meeting was called to order by the President, and the reading of papers resumed.

Dr. J. T. Nattress, "Report of Cases." This paper was very interesting and was discussed by Drs. Presler, Jones and S. S. Baker.

Dr. M. M. Fletcher, "Abdominal Dropsy in a Cow." Dr. Fletcher presented this unusual condition in a way that showed a familiarity with the subject, and a liberal discussion followed by Drs. Nattress, Glendenning, Mills and Martin.

The President now appointed the following as an auditing committee: Drs. J. H. Crawford and N. P. Whitmore.

Dr. L. C. Tiffany offered the following resolutions:

"*Resolved*, That in the opinion of the I. S. V. M. A. the word 'veterinary' is an adjective, and should not be used to designate a practitioner of veterinary medicine and surgery, and that the term 'veterinarian,' being a noun, should be used for such designation."

Dr. E. L. Quitman moved the adoption of resolutions, and added that a copy be furnished the Associated Press of Chicago. On vote, the resolutions were adopted.

Deciding place for the semi-annual meeting was now considered. Dr. W. J. Martin nominated Springfield. There being no further nominations, a vote was taken by acclimation. Carried.

The following bills were read and ordered paid: Secretary, $44.25; Treasurer, $2; Victoria Hotel, for meeting room for two days, $10.

The Auditing Committee having completed its work, re-

ported the accounts of the Treasurer and Secretary as correct, and, on motion, the report was accepted and committee discharged.

The following names applying for membership were read and upon ballot were declared elected: Drs. J. T. Stoner and M. E. Gleason.

A motion was now brought before the house, thanking the Chicago Veterinary Society for the kind and courteous treatment extended to the members of the I. S. V. M. A. and visiting veterinarians, which was unanimously carried.

Election of officers for the ensuing year resulted in the election of the following:

President—F. H. Barr, Pana.

Vice-President—C. C. Mills, Decatur.

Secretary—N. I. Stringer, Paxton.

Treasurer—R. G. Walker, Chicago.

Board of Censors—George B. Jones, Sidell; J. H. Crawford, Harvard, and C. S. Hayward, Mattoon.

The Secretary was instructed to procure a suitable case for the Charter. The Secretary was also empowered to purchase a suitable case or satchel to carry all papers and everything pertaining to the office of Secretary. The Treasurer was authorized to purchase a suitable case for carrying everything pertaining to his office.

The Secretary-elect was instructed to notify all members who are $5 or more in arrears to pay up by the July meeting, 1907.

Dr. Joseph Hughes presented an amendment to Article IV, Section 4, of the By-Laws to read as follows: "We hereby give notice that at next meeting we shall move to add to Article IV of the By-Laws an additional section as follows: Members whose names have been dropped from the roll of the Association on account of non-payment of dues can be reinstated on their application being acted upon by the Board of Censors and Association, and then paying the regular membership fee. Signed, Joseph Hughes and J. T. Nattress."

The subject of a Press Committee was brought up, and after discussion the President was empowered to appoint three members, whose duty it shall be to see that the Association proceedings are brought properly before the press.

Adjourned to meet in Springfield in July, 1907, the date to be made known later by the President.

F. H. BARR, D.V. S., *Secretary.*

VETERINARY MEDICAL ASSOCIATION OF NEW YORK COUNTY.

When the January meeting was called to order at 8.30 P. M. on the 2d, in the lecture room of the New York American Veterinary College, the room was filled with members and visiting veterinarians, who had been attracted by the splendid program announced in the invitations sent out by the Secretary.

President Roscoe R. Bell occupied the chair, and Dr. W. Reid Blair was at the Secretary's desk. The roll-call was dispensed with, and the minutes were read and approved.

The President at once introduced Dr. W. L. Williams, of the New York State Veterinary College, Ithaca, N. Y., who presented a most carefully prepared and illustrated paper on "The So-called Upward Luxation of the Patella of the Horse (The Hooking of the Internal Patellar Ligament over the Internal Condyle of the Femur)." The essayist had arranged a series of well-executed drawings made from subjects in the college clinic in full view of the audience, and in reading his paper he had to constantly refer to the drawings to make clearer the arguments of his paper. While the REVIEW will publish this paper in full in the March number, together with reduced copies of all the drawings, the reader will necessarily lose the benefit of the running remarks made by Dr. Williams while referring to the relations borne by his article to the illustrations. When the Doctor gave evidence and expressed his firm conviction that in most, if not all, of the cases of so-called luxation of the patella, so common in horses which stand idle, especially among "green" horses and those that have suffered from influenza, strangles, etc., as well as in robust young horses, there is no dislocation at all, that the patella remains in its normal position, he was attacking an accepted theory that had been well-seated in the veterinary mind for many years, and, while we believe that every one of his auditors considered that he had made out a true case, it was hard to ask them to throw away the teachings of a century or more, and acknowledge that what they had so often treated and explained to their clients, was wholly wrong; that the manipulations which they had practiced to return the patella into its proper groove, were worse than useless, and the surgical division of ligaments which had been described and performed by many were worthless interferences. It was more than one could expect, that this large body of active practitioners would be prepared to accept *in toto* the conclusions of

one who had closely studied the subject and had proven his case to his own satisfaction. But, as said, Dr. Williams made a deep impression upon his audience, and in the discussion many were prepared to endorse his view even on such short notice. The weakest point in the paper was that no acceptable theory was put forward to take the place of the one which he so ruthlessly destroyed. True, he removed the lesion from the crural group of muscles, and placed it among those attached to the ischium, principally in the long vastus, but he has as much of an explanation of "cramp" here as in those on the anterior face of the femur. But if he did not explain thoroughly just what the causative factor is, he surely proved that it is unreasonable to believe that the internal patellar ligament is hooked over the condyle of the femur. He reasoned that if such was the case, the horse would be lame after the luxation was reduced, and that, in view of the harsh treatment to which such patients are often subjected, that ligament would sometimes be ruptured; that the accident usually occurs while the horse is standing perfectly still, and never while lying down, or jumping, or doing any other act which would apparently predispose toward it. But, then, it will be much better to read the full text of Dr. Williams' paper in the March REVIEW.

Discussion was liberal, and quite diverse in opinion, many of those taking part relating some peculiar experiences. None, however, could recall a case which failed to recover, save a few which sustained fatal injuries while struggling in the efforts to overcome the condition. Among those taking part were Drs. Berns, Grange, Ackerman, Grenside, Bowers, Weaver (of Glen Cove), and others.

Dr. F. C. Grenside, of New York, then presented a most scholarly paper on the subject of "Quality in Horses," which was a gem of thought along a line that has perplexed veterinarians and intelligent horsemen for a long time, and which is a most uncertain condition in horse show and sale catalogues, and in the discussion of the merits of horses. Dr. Grenside offered a standard by which "quality" may be judged, and all felt that his contribution was of inestimable value to a subject that has ever been paradoxical. Fortunately, the REVIEW secured a copy of this paper, and our readers will have the pleasure of reading it in another section of this number. Discussion was disarmed, but many present expressed their appreciation of the paper, and a few contributed some thoughts to the subject.

Dr. Sherwood, who was to have offered a case report on

"Tuberculosis in a Dog," sent a letter expressing regret that he could not be prepared for this meeting, but would be on hand at the February session.

The little dog with peculiar lesions of the iris, which Dr. Gill had offered to bring before the meeting, had gone out of the city for the holidays, but will surely be at the February meeting.

A letter which the President had received from Dr. B. T. Woodward, of Chicago, in reference to the proposed establishment of a veterinary department at the University of Illinois, was read to the meeting. This letter will be found elsewhere in this number.

Dr. Elisha Hanshew, of Brooklyn, was elected a member of the Association.

Dr. Mangan brought up the subject of changing the name of the Association to one more comprehensive of its scope. He pointed out that, while its name indicated that its membership and activity were confined to the County of New York, we have members residing on Long Island as far away as Bay Shore, Far Rockaway, and other points. He also thought that our By-laws were greatly in need of revision, since the supply is exhausted and those that are in existence bear but little relation to those under which we are governed, so numerous have been the amendments.

At the February meeting a committee will be appointed to take up this and put it properly before the Association for action, without consuming too much time.

The Secretary announced the committees which had been appointed, but omitted that upon the Judiciary, which is as follows: George H. Berns, chairman; Dr. Patrick Burns, and Dr. W. Reid Blair.

For the February meeting, occurring on the 6th, Dr. Leonard Pearson, of Philadelphia, will present a subject of interest, probably "Milk Hygiene," or "Dairy Inspection;" Dr. A. Silkman, of the New York Board of Health, "Glanders in Man as Viewed by a Veterinarian;" Dr. D. J. Mangan, "The Agglutination Test for Glanders;" Dr. Thomas G. Sherwood, "Tuberculosis in a Dog;" Dr. H. D. Gill, demonstration of a peculiar lesion of the iris in a dog.

Visitors are welcome at all meetings, and the affiliation of all veterinarians in good standing is solicited to strengthen the good work which the Association is endeavoring to accomplish.

(R. R. B.)

ONTARIO VETERINARY ASSOCIATION.

The Greeks had their oracles; the Romans their augurs; we all have our omens—and the small attendance at the opening of the meeting certainly looked rather inauspicious. However, oracles, augurs and omens cannot always be relied on, as in a very short time members from far and near began to arrive rapidly.

There was soon a good attendance, and a most interesting and instructive meeting was the result; of which the following is a very condensed report.

The annual meeting of this Association was held in the Ontario Veterinary College, Toronto, on Friday, December 21, 1906. Members were present from all parts of the Province and some from the United States.

The President, Dr. L. A. Willson, V. S., of Aurora, opened the meeting with a short address that was received with applause.

The minutes of the previous meeting were read and approved.

The Secretary's, Treasurer's, Registrar's and Auditors' reports were received and adopted, showing that there was now in the Treasurer's hands the sum of $34.31.

The following new members were proposed and accepted: S. E. Watson, V. S., Niagara Falls, Ont.; A. L. Torrie, V. S., Thamesford, Ont.; D. Henderson, V. S., Glencoe, Ont.; B. Freel, V. S., Woodville, Ont.; G. McCluskey, V. S., Alliston, Ont.; D. C. Tennent, V. S., London, Ont.; A. M. Lloyd, V. S., Bolton, Ont.; J. McFadyean, V. S., Arthur, Ont.; E. A. A. Grange, V. S., New York City, U. S.

At the close of the nominations an animated discussion ensued as to who were, and who were not eligible for membership in this Association; and it was ultimately resolved "that a committee, composed of the President, Vice-President, and Dr. J. D. O'Neil be appointed to investigate and report."

Dr. Rutherford, Veterinary Director-General for the Dominion of Canada, reported that he has now in his hands as Treasurer of the Veterinary Organization Committee, the sum of $656.63.

Dr. C. Elliott gave a verbal report of the proceedings of the Veterinary Organization Committee; also Dr. Rutherford and Dr. Andrew Smith spoke relative to the action of the committee and its results, and a motion was subsequently brought forward by Dr. C. Elliott, seconded by Dr. J. D. O'Neil, and

passed, "that the thanks of the members be tendered to Dr. Rutherford for the stand he has taken in endeavoring to elevate the profession in the Dominion."

On the invitation of Dr. Andrew Smith, the meeting adjourned for luncheon.

After luncheon a case of paralysis of the retractor muscle of the penis of the horse was exhibited in the College Infirmary. The penis was hanging down from the sheath and considerably swollen. The operation of its excision was very skilfully performed by Dr. W. J. R. Fowler, Demonstrator of Anatomy of the Ontario Veterinary College, assisted by Mr. C. G. Saunders, veterinary student, who administered chloroform, and who has had considerable experience in producing anæsthesia with chloroform. This operation was viewed with much interest The animal is now doing well.

On the reopening of the meeting Dr. E. A. A. Grange, of New York, who graduated from the Ontario Veterinary College about 30 years ago, read a very interesting paper on "Motor Stimulants" that are sometimes given to race horses with the object of improving their racing powers (called by racing men "doping"). He described the action of the drugs commonly used, and the symptoms and conditions they produce. He also gave various modes for detecting their administration.

Dr. Rutherford gave an interesting and instructive address, mentioning surra and dourine, or maladie du coit. The similarities in the symptoms of these diseases in the Eastern and Western Hemispheres, but the marked bacteriological differences that are found in Manitoba and the adjacent provinces from those in tropical climates and in the Eastern Hemisphere. He also mentioned that Dr. A. E. Watson, of Lethbridge, Alta, Quarantine Station, had reported to himself in a letter dated Dec. 3, 1906, the finding of trypanosomata in the blood of the cotton-tail rabbit *(Lepus sylvesticus)* of that district. This is the first record of the finding of trypanosomata in mammalian blood in Canada.

Dr. Duncombe, V. S., read a good paper on "Castration." He gave an excellent description of his method of operating in the standing position, and advocated the application of carbolic acid or creolin, in oil, to the scrotum afterwards.

All these papers elicited useful discussions, in which many participated. And the thanks of the meeting were unanimously voted to all the gentlemen who had added so much to the interest and instruction of the meeting.

The subject of the so-called "Veterinary Correspondence Schools" was then brought forward, and institutions of that character were very strongly reprobated by many members of the profession.

A motion was passed that the sum of $25 be appropriated for a medal to be presented for competition to the graduating class of the Ontario Veterinary College at the approaching spring examinations.

A motion was passed that the thanks of the Association be tendered to Dr. L. A. Willson, V. S., the retiring President, for his earnest efforts while in office for the best interests of the Association and the profession at large.

It was also moved by Dr. Rutherford, seconded by Dr. O'Neil, and carried, that the officers of the Association be empowered to hold a meeting of the Association during the coming summer, and Dr. Rutherford spoke favorably of the meeting being held in the City of Ottawa.

The following gentlemen volunteered to read papers at the next meeting: Dr. Bowlby, V. S., Tweed, Ont., and Dr. Porter, V. S., of Brantford, Ont.

The following is the result of the election of officers for the ensuing year:

President—J. W. Orr, V. S., Stratford, Ont.

First Vice-President—O. H. Duncombe, V. S., Waterford, Ont.

Second Vice-President—F. G. Hunter, V. S., Welland, Ont.

Secretary-Treasurer and Registrar—C. Heath Sweetapple, Toronto.

Assistant Secretary—R. Barnes, London.

Directors—Drs. C. Brind, G. T. Bowlby, J. W. Porter, C. E. Elliott, W. Steele, J. A. Tancock, T. Baker, Jas. Stewart.

Auditors—Drs. C. Elliott and J. H. Reed.

Delegate to the Industrial Exhibition, Toronto—Andrew Smith, F. R. C. V. S.

Delegates to the Western Fair, London—Drs. J. D. O'Neil and W. J. Wilson. C. HEATH SWEETAPPLE, *Secretary.*

COLORADO STATE VETERINARY MEDICAL ASSOCIATION.

The annual meeting took place in Denver, on Jan. 2, with a fair number of the members in attendance, convening at the Gentlemen's Riding and Driving Club. No clinic was held in

connection with this meeting. Officers were elected as follows:

President—Dr. G. H. Glover, Fort Collins.

Vice-President—Dr. E. J. Foreman, Trinidad.

Secretary-Treasurer—Dr. M. J. Woodliffe, Denver.

Board of Directors—Drs. M. J. Dunleavy, Charles G. Lamb, Mark White, and Solomon Bock.

It was decided not to make any effort at the coming session of the Legislature to amend the state veterinary law, but to enforce the law now upon the statute book, and make arrests and prosecute men who are practicing without licenses.

A paper was read by Dr. Mark White on "Tuberculosis of Cattle and Its Relation to Public Health," pointing out the bad state of affairs in Colorado and the steps that must be taken to protect the people who are using milk. He showed that municipal inspectors do not meet the need in this respect, as they give no heed to the possible presence of tuberculous germs, their work being confined to the amount of butter fat in the milk or the presence of an undue amount of water. State Veterinarian Chas. G. Lamb told of an incident where a man, a victim of tuberculosis, had appealed to him on behalf of the children of Colorado who have inherited a tubercular tendency from their parents and whose health is threatened by impure milk. The Association recommended supervision of the milk supply by state authorities, either through the creation of the office of state inspector or through the State Board of Health or Live Stock Commission. The members declared that such supervision was absolutely necessary for the protection of the life and health of the rising generation in the state.

The question of hog cholera and its suppression was also taken up, and the advisability of calling on the Government for aid in the matter was discussed at considerable length.

Dr. A. P. Drew, Grand Junction, reported several swine of all ages dying from a disease similar to gangrene. State Veterinarian Lamb has been called upon to investigate.

M. J. WOODLIFFE, *Secretary.*

KENTUCKY STATE VETERINARY MEDICAL ASSOCIATION.

On Nov. 21–22, 1906, this Association held its first annual meeting in the Court House, Lexington, Ky., the first day being devoted to papers and discussions, and the second devoted to clinic.

Dr. F. T. Eisenman, of Louisville, President of the Association, presided; the attendance was small.

Dr. W. E. A. Wyman, of Covington, read a paper on "Are the Power Floats in Their Present State Practical?"

Dr. M. M. Leach, of Lexington, read on "Bleeding and Purgatives in Veterinary Practice."

These papers were well discussed. The evening session was devoted to discussions of tuberculosis, veterinary legislation and practical experiences in veterinary practice; adjourning to meet at Dr. D. A. Piatt's veterinary hospital, 755 South Broadway, Nov. 22, at 9 A.M., where a clinic, consisting of diseased molar, castration, periodic ophthalma, quittor, fistula of withers, etc. (about ten cases in all), were dealt with as was considered best.

While the attendance was not as good as it might have been, the meeting was a very profitable and enjoyable one, adjourning to meet on the third Tuesday in November (19th), 1907, the place to be selected later. D. A. PIATT, *Secretary*.

OKLAHOMA VETERINARY MEDICAL ASSOCIATION.

The members of the veterinary profession of Oklahoma and Indian Territory met at Oklahoma City, Nov. 3, 1906, and organized a permanent association under the name of the Oklahoma Veterinary Medical Association, and elected the following officers for 1907:

President—Dr. L. D. Browne, Guthrie, Oklahoma.

Vice-President—Dr. L. J. Allen, Oklahoma City.

Secretary-Treasurer—Walter H. Martin, El Reno, Okla.

The next regular meeting will be held at Guthrie some time in March, 1907, the exact date to be announced later.

WALTER HYDE MARTIN, *Secretary*.

MISSOURI VALLEY VETERINARY ASSOCIATION.

The semi-annual meeting of this Association will be held in Kansas City at the Kansas City Veterinary College, February 18th and 19th, 1907. A full program of interesting papers will be presented for discussion. An interesting clinic will also be provided for. This Association has a membership extending into all the states in the Missouri Valley, and the Secretary takes this opportunity of inviting all veterinarians in the Middle West to attend this meeting. B. F. KAUPP, *Secretary*.

NEWS AND ITEMS.

DR. JAMES BRASHEAR, Mount Sterling, Ky., died July 23.

CHARLES STEWART, U. P. '04, is connected with the B. A. I. at Chicago.

DR. RALPH C. JENKS, A. V. C., '97, Ossining, N. Y., was married Jan. 16 to Miss Charlotte Orser, of the same place.

S. H. SAUL, D. V. S., Montgomery, Ala., has installed one of the Bradwood Manufacturing Company's humane operating tables, and reports that he is using it with great satisfaction.

SECRETARY GRIBBLE, of the Ohio State Veterinary Medical Association, sent out a very tastefully arranged and nicely printed program for the annual meeting, which occurred at Columbus on the 22d ult.

"FIVE THOUSAND HORSES AND MULES were burned in a big livery stable at Atlanta, Ga."—(*Farmer's Advocate, Manitoba.*) This must have been a *very* large stable, spreading over most of the Georgian municipality.

NEW JERSEY STATE EXAMINATIONS.—The January examinations of the New Jersey State Board of Veterinary Medical Examiners were held January 25 and 26, 1907, at the Capitol Building at Trenton, as prescribed by law.

IN writing to Dr. Charles H. Jewell in relation to the latter's article in the September REVIEW upon the Veterinary Service of the U. S. Army, Dr. Goldbeck, a veterinarian of the German Army, stated that he was preparing a book on the subject of the military veterinary service of the various countries.

BOVINES POISONED BY PAINT.—A dispatch from Sag Harbor, L. I., to the Brooklyn *Eagle*, dated January 9, says: "A herd of Jersey cattle owned by Henry Hainey, of Sagaponack, broke out of the cow-yard yesterday and drank from a tub of paint left exposed by painters who were painting the farmer's barn. Two of the cattle were found dead and others were only saved by hard work by a veterinarian."

AN UNAPPRECIATIVE BUCK.—*Meriden, Conn., Dec. 29.*—M. L. Carpenter, a veterinary surgeon, was painfully wounded at East Hampton yesterday by a blind buck. The deer, which had been shot in the face, was caught in the woods and taken to a stable, where Carpenter, in the rôle of the good Samaritan, began treating it to restore the sight of one of its eyes. It was docile at first, but yesterday it suddenly attacked Carpenter in its stall, savagely kicking and trampling upon him. Stablemen finally got him away from the flying hoofs. He was very

badly bruised and shaken up.—(*New York Herald, Dec. 30.*)

MOLASSES FOR HORSES.—Dr. D. S. DeWolf, Hart, Mich., writes: "I have been a subscriber to the REVIEW for a number of years, and have become interested in molasses as a food for horses, which is often spoken of in its pages, but the quality is never mentioned. Can you give me any information regarding this—not simply the best, but would so-called 'black strap' molasses do?" *Answer.*—Any molasses containing a large percentage of glucose will suffice, and, of course, the purer the better. In the majority of the experiments mentioned in this journal the by-products of sugar manufactories were employed. A ready-prepared food rich in saccharine constituents, guaranteed to be good New Orleans molasses, is advertised in the REVIEW under the name of "Atlas Food," the manufacturers of which state that there is one quart of such molasses to every four quarts of "feed," and the results from the feeding of which are excellent.

NEBRASKA VETERINARY LAW HELD VOID.—The law enacted by the last legislature to regulate veterinary surgeons is unconstitutional, according to a decision rendered by County Judge Leslie yesterday afternoon in the case of the state against Dr. D. D. Turner. The case was filed by Dr. Ramacciotti as a test of the law. The decision will be of interest because several other prosecutions hinged on the outcome of this case. It is said it may be carried to the supreme court for a final test. The law which is declared bad provides that no person engaged in the practice of veterinary surgery shall assume the title veterinary surgeon, or any analogous title or any degree conferred by a recognized college of veterinary surgery unless he has first secured a license from the state board. The law did not prohibit unlicensed surgeons from practicing, but merely prevented them from holding themselves out as such or from using any title or degree in connection with their profession. Judge Leslie held that this was not a proper application of police power of the state and was an improper abridgement of the personal liberty of citizens. He pointed out that the law made it a crime for a person who was unlicensed to tell another person that he had received a degree of veterinary surgeon from a college, even though it was true. A. W. Jefferis, who attacked the validity of the law, also contended it was against public policy and intended to protect titles. Dr. Turner has practiced in Omaha sixteen years. He was a student at Oxford, a graduate of the Edinburgh Veterinary College, and a graduate in

organic and inorganic chemistry in a London school. Because he was not registered the law prohibited him from hanging his diploma on the wall of his office or even telling anyone he had a degree or was a veterinary surgeon. His specific offense was in sending out a bill with the words "Dr. Turner, graduate veterinarian," on it. He was arrested for using the title after his name. Judge Leslie said he thought a law that provided no veterinarian should practice without registering would be sound, but he did not think the legislature had the right to deprive a person of the right to use a title or degree that had been conferred upon him.—*(Iowa-Nebraska Veterinary Bulletin for January.)*

THE VETERINARIAN AND THE MUSIC MASTER.—Two gentlemen entered the smoking car of a railroad train in Central Pennsylvania not long since. There being but one vacant seat they were obliged to divide it between them. One of the gentlemen was a veterinary surgeon, the other a teacher of singing. One of the most characteristic things about a man of the world is his reticence in the presence of strangers—especially so, concerning his own affairs. These two men, in addition to the conventional caution of their kind, were also each a little sensitive as to his profession. It is not quite explicable, yet we sometimes see a full grown man trailing about with a music roll under his wing and not at all shy. There are others, however, who are. These men usually carry their music in a valise, which, while it looks professional, does not advertise a specialty. It is not that they are ashamed of their work; they probably dislike to be classed with the fellows who advertise their business with the music roll. The veterinarian, meanwhile, though not at all above his work, feared the mental estimate and comparison of a stranger as between the professional care of sick animals and sick men. So the appearance of his valise was quite as innocent of indication as to its contents as was the musician's. The conversation opened by an exchange of comment on the weather; from that to business prospects, the political activities next, and by that time each began to wonder who the other was or more particularly what his business was. Naturally, the bolder of the two, who, in this instance, was the veterinarian, took the leap. "By the way, what did you say your business is?" "I did not say," replied the musician, "but I don't mind telling you; I am a repairer and builder of harps." His companion's face was a study. "Humph," he grunted, and then added: "Well, that is some-

thing out of my line. I didn't suppose there was much doing in the harp line these days." "O yes, quite something," was the reply. "Yes, I can take new harps and tune them up, put in the strings and fix the pegs and polish them off and get them ready for the market." "Is there any money in it?" asked the veterinarian. "Yes," said the harp man. "Some of them bring a great price, and some of them are worthless." "I suppose harps, like violins, improve with age; is it not so?" "Well, not exactly," was the reply. "You see, old harps have been played on so long that they become tinny and thin, and then some other fellow who doesn't know the business has probably had a hand in making or repairing them; we find it a difficult matter to get any tone into them." "Well! I suppose you do not tell your customers that you can't fix them up and spoil your own business, do you?" asked the veterinarian. "Not always," sighed the harp specialist. "Is there any money in it?" "No, not any great amount. I only get paid by the hour." "What do you call your time worth?" "I usually get about $12 an hour from my customers." "Whew!" whistled the veterinarian. "$12 an hour!" "Yes, but you know there isn't much in it, for there are only so many working hours a day, and it costs a great deal to advertise." The veterinary surgeon sat still and looked puzzled. He couldn't quite swallow the stories of his companion, and still was too much of a gentleman to say so. Just here came *his* turn to submit to an examination. "You haven't told me what your business is yet?" "No, but I will. I am in various lines of activity. I am a plasterer and have something to do with leather; do quite something in oils, powders and hides, and have a good deal to do in ivory filing." "You certainly have a variety of interests," said the singing master. "It must require a large plant to carry on such a business." "It doesn't require so much of a plant as it does nerve to describe it," the veterinarian said rising to his feet, for just at that moment the train reached his station. Strange to relate, the men smilingly exchanged cards as they parted. The veterinarian said to his wife when he arrived home: "I guess we will send Mabel to Prof. Blank for her singing lessons. I met him on the train to-day and he seems a decent sort of chap. I would like to help him along." The teacher remarked to his wife: "If I ever save money enough to buy a horse and he ever gets sick, I shall certainly patronize Dr. ———. I met him on the train to-day, and he seems a very capable man."—(*The Etude, Feb., 1906.*)

VETERINARY MEDICAL ASSOCIATION MEETINGS.

Secretaries are requested to see that their organizations are properly included in the following list.

Name of Organization.	Date of Next Meeting.	Place of Meeting	Name and Address Secretary.
American V. M. Ass'n.....	Sept. 10-13, '07.	Kan. City, Mo.	R. P. Lyman, Hartford, Ct.
Vet. Med. Ass'n of N. J.....	July, 1907.	Asbury Park.	W. H Lowe, Paterson.
Connecticut V. M. Ass'n.....	1st Tu. Feb., '07	Hartford.	B. K. Dow, Willimantic.
New York S. V. M. Soc'y...	Sept., 1907.	New York City	G. T. Stone, Binghamton.
Schuylkill Valley V. M. A. .	June 19, 1907.	Reading, Pa.	W. G. Huyett, Wernersville.
Passaic Co V. M. Ass'n.....	Monthly.	Paterson, N. J.	H. K. Berry, Paterson, N. J.
Texas V. M. Ass'n...	Call Exec. Com.	.....	E. L. Lewis, Waxahachie.
Massachusetts Vet. Ass'n.....	Monthly.	Boston.	F. J. Babbitt, Lynn, Mass.
Maine Vet Med. Ass'n.....	.....	....	R. E. Freeman, Dexter.
Central Canada V. Ass'n.....	Feb. 6-7.	Ottawa.	A. E. James, Ottawa.
Michigan State V. M. Ass'n...	Feb., 1907.	Lansing.	Judson Black, Richmond.
Alumni Ass'n N. Y.-A. V. C..	April, 1907.	141 W. 54th St	T. F. Krey, N Y. City.
Illinois State V M. Ass'n.....	July, 1907.	Springfield.	N. I. Stringer, Paxton.
Wisconsin Soc. Vet. Grad.....	Feb., 1907.	Madison.	S Beattie, Madison.
Illinois V. M. and Surg. A....	.....	Decatur.	C. M. Walton. Rantoul.
Vet. Ass'n of Manitoba	Not Stated.	Winnipeg.	F. Torrance, Winnipeg.
North Carolina V. M. Ass'n...	.....	.....	C. J. Fleming, Winston Salem
Ontario Vet. Ass'n.....	Summer 1907.	Ottawa.	C H. Sweetapple, Toronto.
V. M. Ass'n New York Co....	Feb. 6, 1907.	141 W. 54th St	W. R. Blair. N. Y. City.
Ohio State V. M. Ass'n.....	....	Columbus.	W H. Gribble, Wash'n C.H.
Western Penn. V. M. Ass'n...	1st Wed. ea. mo	Pittsburgh.	F. Weitzell, Allegheny.
Missouri Vet. Med. Ass'n.....	.....	.....	F. F. Brown, Kansas City.
Genesee Valley V. M. Ass'n...	.....	Rochester.	J. H. Taylor, Henrietta, N. Y.
Iowa Veterinary Ass'n.....	.....	..... .	H. C. Simpson, Denison, Ia.
Minnesota State V. M. Ass'n	.....	.....	C. A. Mack, Stillwater.
Pennsylvania State V. M. A...	March 5-6, '07	Philadelphia.	C. J. Marshall, Philadelphia
Keystone V. M. Ass'n.....	Monthly.	Philadelphia.	A. W. Ormeston, 102 Herman St., Germantown, Pa.
Colorado State V. M. Ass'n...	1st Mon. in June	Denver.	M. J. Woodliffe, Denver.
Missouri Valley V. Ass'n	Feb. 18-19. '07.	Kan. City, Mo.	B. F. Kaupp, Kansas City
Rhode Island V. M. Ass'n....	June and Dec.	Providence.	T. E. Robinson, Westerly, R. I
North Dakota V. M. Ass'n....	.....	.....	J. A. Winsloe, Cooperstown.
California State V. M. Ass'n...	Mch. Je. Sep, Dc	San Francisco	C. H. Blemer, San Francisco.
Southern Auxiliary of California State V. M. Ass'n....	Jan. Apl. Jy, Oct.	Los Angeles.	J. A. Edmons, Los Angeles.
South Dakota V. M. A.....	.....	.....	E. L. Moore, Brookings.
Nebraska V. M. Ass'n.....	.....	.....	Hans Jenson, Weeping Water
Kansas State V. M. Ass'n....	Jan. 1908.	Manhattan.	Hugh S. Maxwell, Salina.
Ass'n Médécale Veternaire Francaise "Laval,".....	1st & 3d Thur. of each month.	Lect. R'm Laval Un'y Mon.	J. P. A. Houde, Montreal.
Alumni Association A. V. Col..	April each yr.	New York.	F. R. Hanson, N. Y. City.
Province of Quebec V. M. A...	.....	Mon. & Que.	Gustave Boyer, Rigand, P. Q.
Kentucky V. M. Ass'n.....	Nov. 19, 1907.	Not decided.	D. A. Piatt, Lexington.
Washington State Col. V. M. A.	Monthly.	Pullman, Wa.	Wm. D. Mason, Pullman.
Indiana Veterinary Association.	An'l Jan., '08	Indianapolis.	E. M. Bronson, Indianapolis.
Iowa-Nebraska V. M. Ass'n..	.....	.....	A. T. Peters, Lincoln, Neb.
Louisiana State V. M. Ass'n..	.....	.....	E. P. Flower, Baton Rouge.
Twin City V. M. Ass'n.....	2d Thu ea. mo.	St. Paul, Min.	S. H Ward, St. Paul, Minn.
Hamilton Co. (Ohio) V. A....	.....	Cincinnati.	Louis P. Cook, Cincinnati.
Mississippi State V. M. Ass'n..	.....	....	J C. Robert, Agricultural Col.
Georgia State V. M. A..:....	July 4, 1907.	Atlanta.	L C. Willoughby. Experiment
Soc. Vet. Alumni Univ. Penn..	June, 1907.	Philadelphia.	B. T. Woodward, Chicago.
Virginia State V. M. Ass'n....	.....	.....	S. C. Neff. Staunton.
Oklahoma V. M. Ass'n	March, 1907.	Guthrie	W. H. Martin El Reno.

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—*From a Lover of the Horse,*
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